

MARCH 1950

# MOTOR trend



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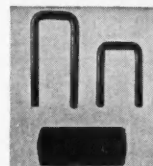
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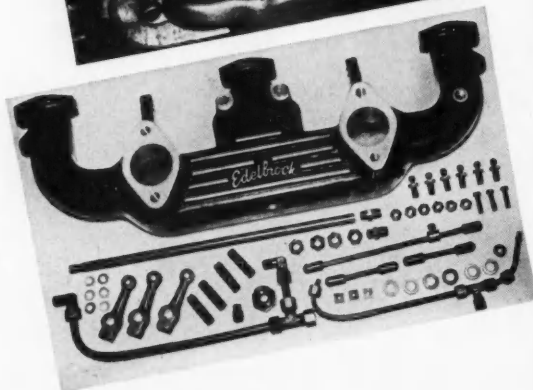
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COVER: Standing beside a restyled Lincoln Continental is lovely Betty Nelson, band vocalist at El Rancho Vegas, who will greet drivers of the Mobilgas Economy Run when they arrive at Las Vegas, Nevada on the first leg of their trip. Photo by Desert Sea News Bureau

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### an international car?

**E**ARLY this year George W. Mason, president and chairman of the Nash-Kelvinator Corporation, unveiled a convertible car to cost \$1,000. The most interesting point about this car is not the fact that the car will sell for \$1,000, nor that it will be an economy car, but that it is the first attempt by the U.S. to build an international car.

Nash-Kelvinator is certain that what Paul Hoffman and our government are doing, insofar as extending technical assistance and injecting competitive thinking into European industry, fills a definite need. Therefore, it is his and Nash Motors' belief that if they were to build a car on an international basis, it would supply needed dollars for increased domestic and international trade. In addition, it would represent additional private enterprise and support of the economy assistance pro-

grams of our own government, also contributing to employment in both the U.S. and Europe.

Through the study of the possibilities of an international car, Nash Motors believes that there are many advantages to be gained in producing a car on an international basis: reduced development expense through use of proved European engines and components; elimination of expensive tooling; increased foreign sales possibilities; and added opportunity for dollar earnings by European countries.

We think that such a plan has definite possibilities and that Nash Motors is to be commended for formulating such a plan. Nash Motors' principal interest, at this time, is the public's reaction to this proposed car. Does it fill a need? Do the plan and car have merit? What do you think?

# The N. X. I.

## Nash Motors Introduces an International Car

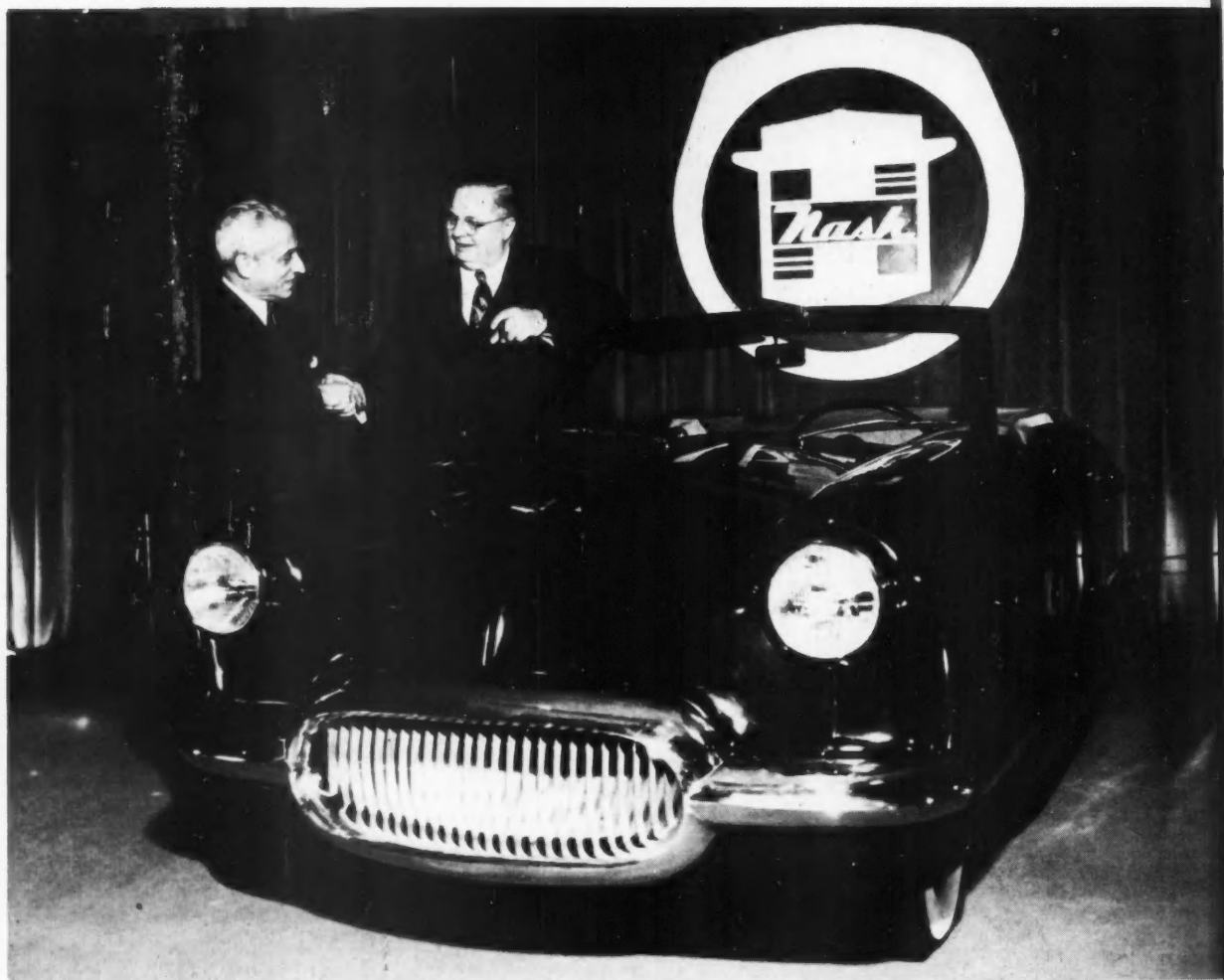
**F**OR THE last twenty years, American automotive manufacturers have been attempting to sell the American public an economy car. The American Austin tried its midget on the car buyer during the depression and lost out because of litigation with Austin in England over the use of the name. Willys put out a low horsepower car in 1933 and managed to stay in the market only with difficulty. The American Bantam was introduced in 1938, had a brief popularity, and left the field when the war began. Crosley made a bid for the economy car business with the two-cylinder air-cooled midget in 1939, and since 1947 with some success, the brazed-block four and the new cast-iron block four-cylinder engine.

Foreign manufacturers have also attempted to create an American market. Fiat brought their "Mickey Mouse" model 500 to U. S. in 1937 and, in conjunction with Simca of France, have managed to keep a fair amount of these

cars on the streets. The end of the war saw the MG become very popular in the United States—but mostly as a sports car, not as a true economy car for the general market. The Austin A40, the Morris, the rear-engine Renault, and a flood of American independent companies made a bid for the economy market since the war but not with any remarkable individual success.

Now Nash Motors, one of the oldest independent car builders, proposes to enter the field with an international car to be sold for \$1000. A prototype of the car was shown in New York, Washington, Los Angeles, and other major cities during the month of January to dealers and the

**REPRESENTING** two companies and two countries are Prof. Vittoria Valletta of Fiat and George W. Mason of Nash Motors, standing beside the N.X.I. (Nash, Experimental, International). If this car is produced, it will probably use a Fiat engine





press; the idea being to determine by this limited showing and a mailed questionnaire-survey whether or not the public would buy an automobile of this type.

George W. Mason, president of Nash, ordered research to be done on an economy car immediately after the end of the war. In the process of the car's development, two, three, and four-wheel cars, powered by two, four, six and eight cylinder, pancake, opposed, in-line, liquid and air-cooled, two- and four-cycle engines were tested, using both engine-in-rear and conventional engine locations as well as front wheel drive. Reversing the usual developmental technique for small cars in America, Nash engineers worked up to the present design, instead of attempting to cut down a big car to the proposed scale. They spent many months in Europe examining foreign manufacturing methods and the economy cars of France, Italy, England, and Germany; the result of these investigations was that the "international" car was determined to be the most practical for their purpose.

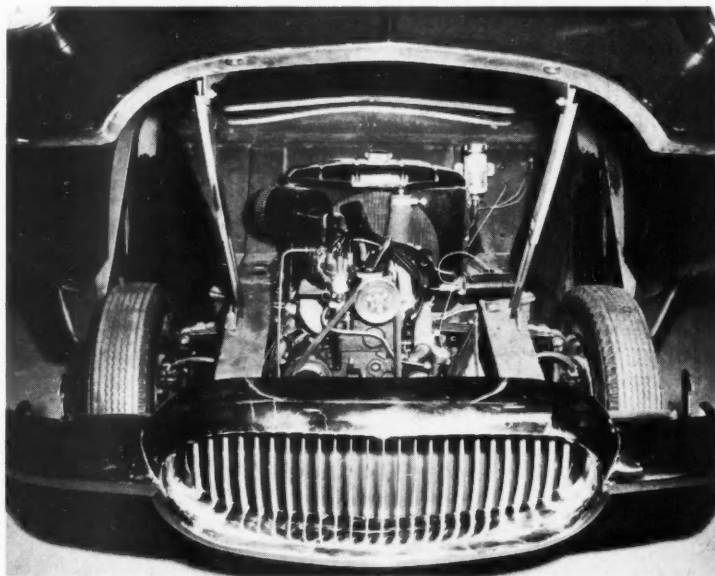
What is an international car? Nash proposes to use either Fiat or British Standard four-cylinder engines, front and rear suspension systems, rear axles, clutch and transmissions on the Nash Airflyte (body and frame a single, welded unit) construction. The engines would be short-blocks, in other words, American carburetors, generators, starters, plugs, fuel-pumps etc. would be used, as well as American brakes and wheels and accessories. Mr. Mason believes that this method of manufacture would save the prohibitive developmental expense of tooling up all the mechanical elements of the car, increase its foreign sales potential, and "would provide Europe with needed dollar exchange and represent private American enterprise in support of the European assistance program being conducted by our government," an interesting point.

The trouble with all cars designed for basic economical transportation so far—both here and abroad—has been their ugliness, uncomfortableness, and poor performance as far as acceleration and highway cruising speed are concerned. Up to the present time, American drivers have been conditioned to expect guts and comfort from a car as primary requisites, with economy a comparatively unimportant factor. However, with gasoline taxes mounting, and the so-called "low-

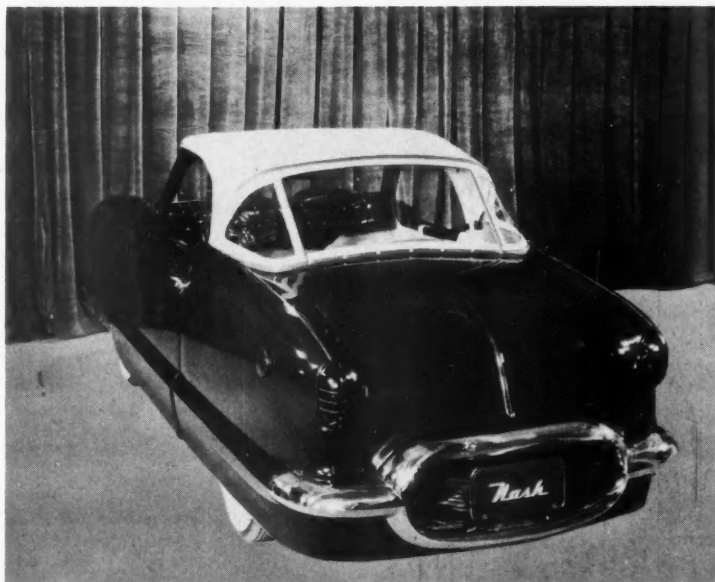
March 1950



FRONT view of Nash Motors' proposed experimental economy car—the N.X.I.



Hood and fenders of the N.X.I. lift as one unit, allowing easy access to engine



SPARE tire is stowed in a convenient position and is protected by the bumper

Seven

priced cars" approaching the \$2000 mark, an economical and inexpensively priced car may become a necessity for the buying public—especially if a good-looking and comfortable small car is available, and if these two factors are strong enough to compensate for a lesser degree of performance.

The prototype Nash is a good-looking small car. The design is distinctive and functional, and at the same time, it makes the car look larger than it actually is. The lid to the rear deck has been eliminated for economy in production and also to permit additional stiffness in the body panel. The spare is at present carried in a small hatch accessible through the center of the rear bumper-grille design. The front fenders and hood lift as a unit to expose the engine and are hinged on the windshield line and the front edge of the door line. The dash shape follows the hood and fender contour, and the Nash Uniscope (all instruments mounted in a teardrop shaped unit fronted with a magnifying glass lens) is used with a clock built into the steering wheel center.

Comfortable individual seats with folding backs are provided for the driver and passenger, and there is ample storage space under the rear deck. Nash proposes three body styles: convertible coupe with Plexiglas side windows, sports roadster, and a coupe,

the last being the cheapest to build. The prototype is all-steel construction, so it may be assumed that the production model also will be constructed of steel. Low-pressure 5.90 x12 tires have been specified for the car. The prototype car exhibited contained the Fiat 500B engine and four-speed forward transmission, and the handmade body was mounted on a standard Fiat 500 chassis. The proposed production model would be four inches longer (84 inches) and would have a tread of 47 inches.

After a close examination of the exhibited car, these points were noted:

1. No sway-bar was contained in the rear suspension, which would considerably cut down top speed and highway cruising performance.

2. Gas cap was exposed and broke the contour of the fender design. Should be placed under a hatch.

3. Tail lights extend out beyond the protection of rear bumper.

4. No cover over spare-tire hatch. (However, the head of Nash engineering assured us that this factor had already been corrected on plans for the production model.)

5. With the present Fiat 500 engine and transmission set-up, the accelerator is awkwardly placed between clutch and brake pedal. Transfer to brake pedal from accelerator is difficult.

**INTERIOR of N.X.I. is simple and compact**

6. The Model 500B Fiat transmission has an extremely long gearshift lever. (The 1100cc engine, which can be substituted for the 500B, has a three-speed forward transmission with a short shift lever as does the English Standard engine—it is approximately the same horsepower as the Fiat 1100—about 36 horsepower.)

7. The bumper molding along the sides of the car should be chromed to accentuate length and to provide body panel protection.

8. The floor in back of the front seats is raised about four inches, making a conversion into a club coupe seating almost impossible. (Note: This car was mounted on the Fiat chassis which has only an 80-inch wheelbase. The longer wheelbase on the production model might make a club conversion possible.)

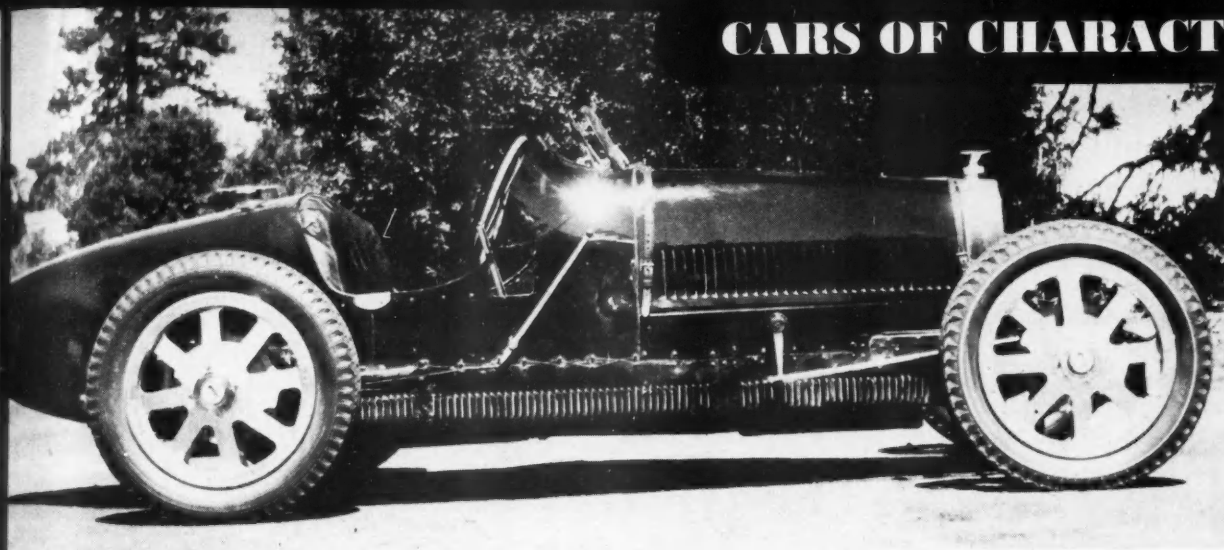
9. Instead of the two individual seats, a full-width, folding-back seat with a pull-down arm rest would allow for the occasional carrying of a third passenger when necessary.

10. No provision has been made in the front-end treatment for either license plates or accessories.

All three proposed powerplants were also on exhibit and while the two larger engines with their conventional transmissions are to be favored for general driving, the fact should be

*(Continued on page thirty-two)*





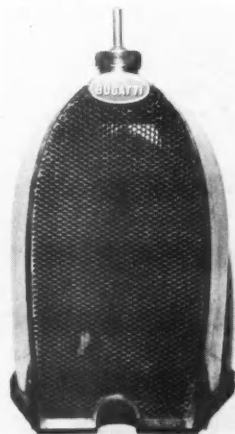
## THE BUGATTI

TYPE 35 Bugatti in full racing trim. Although capable of over 120 mph, unique maneuverability made it the most prolific race winner of all time

THERE is quite a hassel going on these days over whether the "engineered" car of the past was superior to the "styled" modern product, or vice versa. Such a controversy is admittedly futile. The forces of evolution aren't equipped with a reverse gear, and present trends aren't likely to turn back on themselves and produce a "renaissance" that lacks mass appeal. Nevertheless, there were some phenomenal cars produced during the "prestylist" period, and since they often were decades ahead of their own time, an occasional backward glance at them isn't wasted.

How many men, for example, are there today capable of conceiving and designing a complete automobile . . . frame, engine, running gear, and all? Not many, of course. And of this number most would simply reshuffle the applications of lecture-room engineering formulae. Those whose results would be of superb and fantastic originality

*Text and Photos by  
Griffith Borgeson*



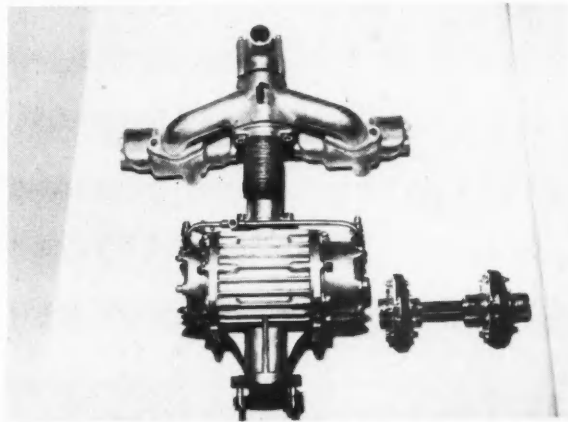
BUGATTI racing radiators were narrow to cut wind resistance, but very thick

number approximately zero, and we've jumped from competent workmanship to genius-infused craftsmanship.

Just such a genius was Ettore Bugatti, a frustrated sculptor who, with no technical training of a formal nature, simply hauled off and singlehandedly conceived, designed, and built some of the most magnificent (albeit often temperamental) machines of our time.

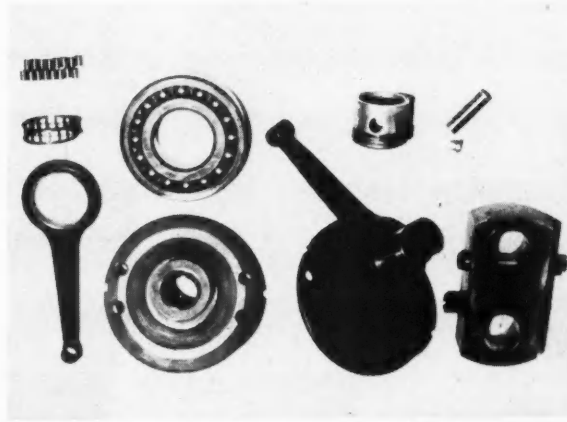
*Le Patron*, as he chose to be called—the boss, the lord and master of Molsheim—was a dyed-in-the-wool aristocrat, and an eccentric one at that, and his personality is so accurately and uniquely reflected in everything that left his factory that a well-informed Bug addict can identify any Bugatti model from a single one of its parts. He certainly was the prophet and originator of the "new" high-performance minicar idea. In a time when the conventional racing car had the

(Continued on page twenty-two)



ROOTS blower, drive shaft, and manifolding of Grand Prix 35C

March 1950



ELEMENTS of typical eight: webs, con rod, piston and pin

Nine



# Classic vs. Restyled

by George Finneran

**NOTE:** Whether you are an adherent of the "classic" American car school or belong to the new school of "restylists," you will have to admit that no matter how bad a thing is, it has some good. So it is with cars and their design.

In the following article, staff writer George Finneran attempts to clarify the point of view of both schools of thought. After reading his objective treatment, you, the reader, will have a better insight into what the car of the future may well be. —Editor.

**I**N OUR "Letters From Our Readers" section at the back of MOTOR TREND, a major ideological warfare has been conducted for the past four months by the adherents of two dissimilar schools of automobile design. One faction has termed its concepts of auto design the "Classical," the other has more or less settled on "Restyled" as being the proper designation for the design theory for which they stand. Members of both these groups are actually united in a much larger, more general classification onto which I have affixed the label "Individualists."

As against this general conception of design—although their opposition is purely passive as far as MOTOR TREND is concerned—we have an even larger school of design which I have inventively termed the "Transportationalists." Now the "Transportationalists" are uninteresting people in this respect; they view an auto as being merely transportation from one place to another. They care not how it looks as long as it does not look too different from other cars. They care even less about performance and general refinement of their car, requiring only that their wheeled vehicle be serviceable transportation, cheap to operate,

easy to maintain, and above all, unembarrassingly similar to the other vehicles parked next to it on the street. That is what may be termed a "negative attitude" towards automobile design.

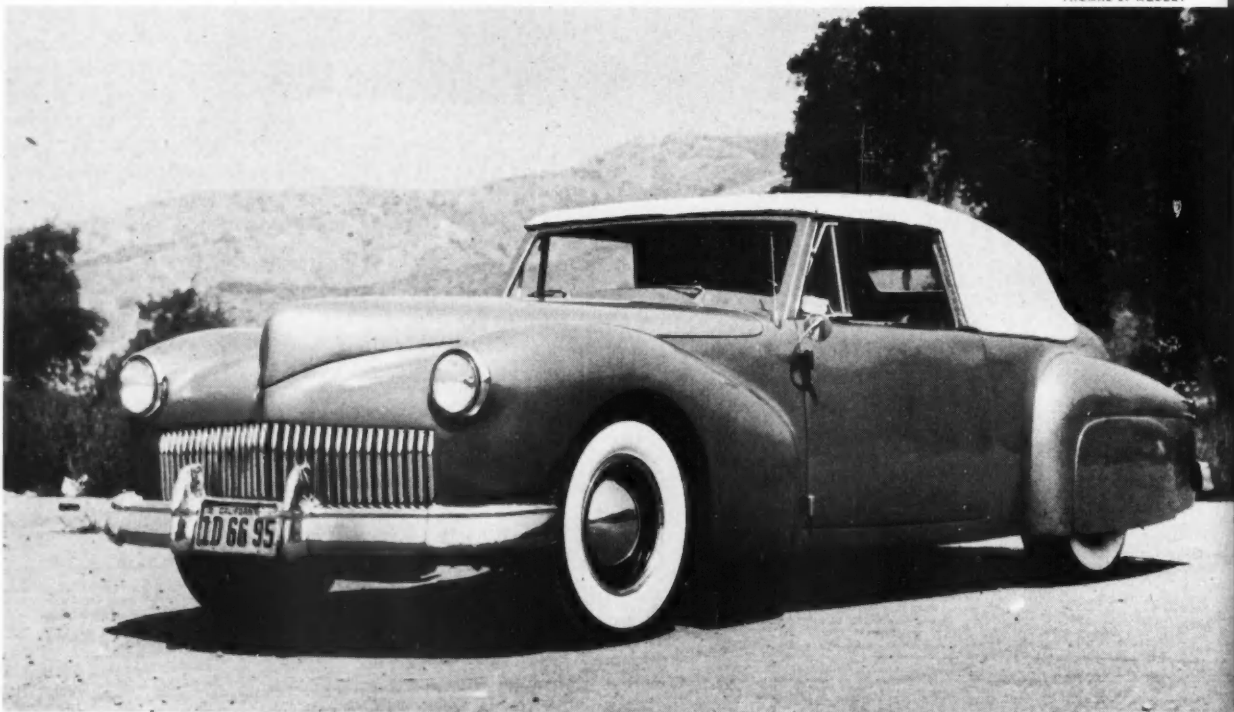
But, the readers of MOTOR TREND are very positive-minded. They want their own cars to be different from other cars on the road: different in performance, different in looks, and different in the thousand and one refinements of detail that *can* go into an automobile. It's my theory that this is because the "Individualists" *like* to be different. Not "have to," or "want to," or any other pseudo-psychological explanation, but just "like to." Their enjoyment of this state of being different as far as automobiles are concerned has been the basic motivation of every innovation in car design since the beginning of this era of transportation. When enough people get together and demand a change, the change usually takes place. When enough car owners like something well enough to copy it for their own car, it becomes standard on production cars within a few years—thus the individualists constantly contribute to the betterment of life for the non-individualist.

With this general background of progress in auto design kept well in mind, let's examine as objectively (the favorite word of schools of journalism) as possible the two groups now fighting it out on the back page. Let's see what each is contributing to the evolution of automobile design as well as what misdirections and obstacles each may be placing in the path of the "Ultimate in auto design," if such a criterion exists.

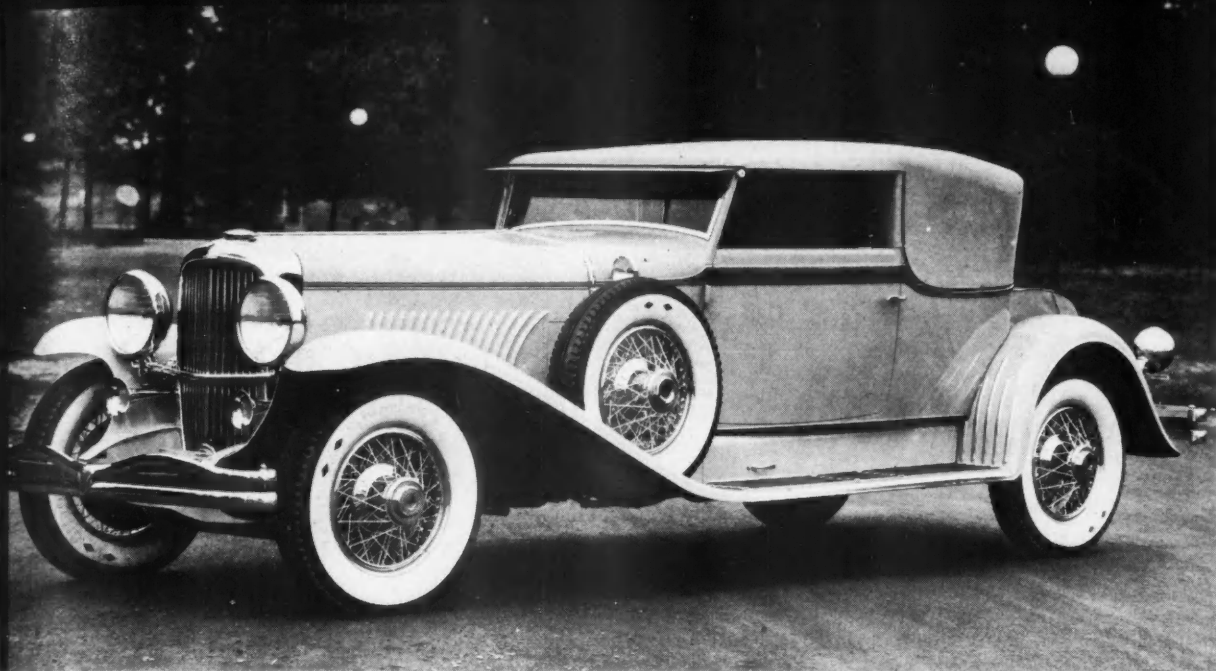
First, what contributions to better auto design are the adherents of the "classical" style evoking? According to their adversaries, they are trying to foist on the bleeding eyes of the public "... big, bleak blobs of brute force ... gas-eating crates of yesteryear with the streamlining of a

**CUSTOMIZING** applied to a '40 Continental, owned by Tommy Jamieson, includes removal of all chrome, reshaped front fenders, special grille of chrome-moly tubing and addition of '46 rear fenders. Front spring was flattened and spare wheel sunk in deck

THOMAS J. MEDLEY







**TYPICAL** classic car is this 153½-inch wheelbase Duesenberg, with Rollston Convertible Victoria body

M. R. BOHMAN

Model T . . . monsters . . . clunks . . .” and other tender phrases of hate. In order that the advantages of the classical design carry more weight, I shall attempt to refute some of the implications of the terms quoted above. Bigness—well, a lot of classical cars were big in wheelbase, but they were smaller in every other dimension—they were narrower, lower, and actually shorter overall because of their lack of fore-and-aft overhang. Big in powerplant size—yes, but for two reasons I can think of, which—for some

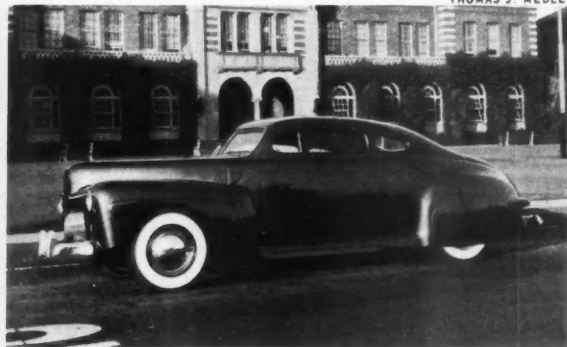
unaccountable reason—seem to have fallen into both disfavor and disinterest. One, longevity, and two, versatility of range.

The engines under the hoods of Auburn, Duesenberg, Packard 12, Cad 16, and the Stutz—and many another car—were designed so that the future owner would not have to tear his engine down for a major overhaul until well over the one-hundred-thousand-mile mark and also that

(Continued on page twenty-six)

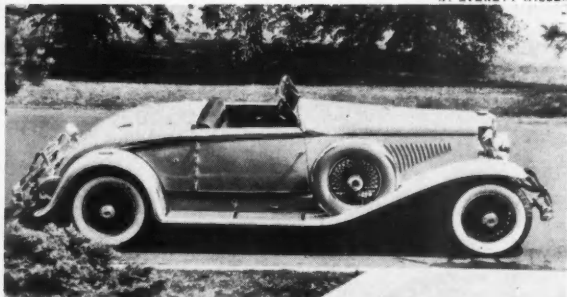
**TYPICAL** custom job is this '42 Ford club coupe by Gil's Body Shop. Top has been chopped, nose and hood smoothed off

THOMAS J. MEDLEY



**ONE** of the classics is this Duesenberg La Grande roadster

W. EVERETT MILLER



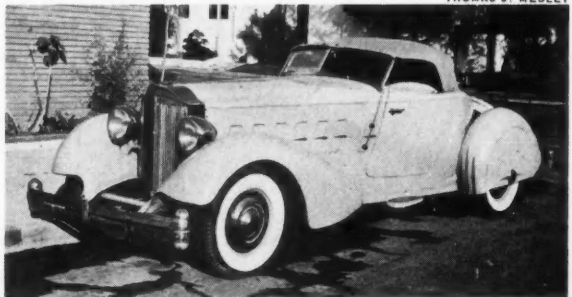
**CUSTOM** '46 Pontiac has had full fenders added, center piece of grille filled in and hood smoothed off. Push-button doors used

THOMAS J. MEDLEY



**1933 PACKARD V-12** custom speedster, designed by LeBaron

THOMAS J. MEDLEY



# MOTOR TRIALS

## Comparison Test of the 1950 Plymouth



ON MOUNTAINOUS dirt roads, the '50 Plymouth climbed easily

by Walter A. Woron, Editor

The car for this road test was furnished to MOTOR TREND by Paul Bobst Co., 6119 Hollywood Blvd., Hollywood, California, through arrangement with the Chrysler Corporation, Los Angeles branch.

**A**MONG the many tributes that can be paid to the new 1950 Plymouth is the fact that the car is functionally designed. With the introduction of their 1949 line of cars, the Chrysler Corporation evolved functional styling and again this year they have set the pace in this type of styling concept.

Basically, the new Plymouth is designed with comfort in mind—comfort for the driver and comfort for the passengers. Chrysler engineers believe that they have achieved this result through the provision of “chair-height” seats and considerable headroom, in conjunction with the conventional suspension system.

Before taking the Special DeLuxe Plymouth four door sedan out on the first leg of its road test, we had the fuel tank filled, checked the oil level and recorded the odometer reading, which was only 98 miles.

One of the first impressions that you get when you slip behind the wheel of a Plymouth is that there is considerable room in the front seat of a car that actually looks small from the outside. The next is that of the unusual feel of the chair-height seats, which afford you excellent all-around visibility.

Starting the car is a different experience than that of most cars, for, as with the 1949 Plymouth, the starter switch is combined with the ignition switch. Although this is a good feature, it is possible that it could be improved upon by adding a safety switch in the circuit. The purpose of this safety switch would be to prevent the starter from unintentionally being turned over when the car is in gear.

Driving the car through traffic is no problem, for it handles with considerable ease and the shifting mechanism



TAKING a hairpin turn to test the Plymouth's cornering ability

is favorable. Clutch action is conventional, the clutch having a single dry plate. The transmission gears are all helically cut, with second and third gears being synchro-mesh.

Across town, with constant stops and starts, the engine remained cool, even though there was very little mileage on the car. The credit for this lies in the full-length water jackets in the block, the large fan and good lubrication of the cylinder walls. After constant use of the typically good Plymouth brakes, both through traffic and later, there was no evidence of fade. These brakes, with a lining contact area of 158 square inches, are ample enough to stop the car in almost any emergency.

On dirt roads, both rutty and muddy, the car performed well, although it should not be considered a Jeepster. In spots where some cars might have bogged down, the 97 hp Plymouth engine pulled the car through.

Once on the open highway, the Plymouth proved its worth, in the form of a comfortable ride packed into a 118½-inch wheelbase. This comfort has been engineered into the Plymouth from the ground up, starting with the

super-cushion tires (6.70x15), front coil springs, long (53 $\frac{3}{4}$  inches) semi-elliptic rear springs, telescopic shock absorbers, on up through the chair-height seats.

Moving into hilly country, steering and cornering qualities again became apparent. The steering wheel has a positive feel and is somewhat sensitive, even though it is a fairly slow ratio. Stability in turns has been improved over 1949 models through the added rear wheel tread, which is now 58 $\frac{7}{16}$  inches (three inches wider than the front). To reduce sway, a sway bar is used in front, attached to the forward side of each lower 'A' frame. Since the front end is softly sprung, the sway bar is a definite advantage.

Arriving at our quarter-mile test strip, we began the speedometer calibration check. Through this check we found that when the speedometer indicated 30 mph, the car was actually doing 28.7 mph; at an indicated 60 mph, the car was traveling 56 mph.

With the speedometer calibrated, we then conducted the acceleration trials. Results of this phase of road testing are shown below:

| TEST                               | TIME (AVERAGE) |
|------------------------------------|----------------|
| Standing start, $\frac{1}{4}$ mile | :21.27         |
| 0-30 mph through gears             | :05.93         |
| 0-60 mph through gears             | :18.56         |
| 10-60 mph in high                  | :24.40         |
| 30-60 mph in high                  | :14.84         |

Two flying runs were made (in opposite directions) through the  $\frac{1}{4}$ -mile trap, with the time averaging out at 80.3 mph. A  $\frac{1}{2}$ -mile approach course is used and it is doubtful if this car could have attained a much higher speed, since the rear axle ratio is 3.9:1, somewhat low for high speed work.

Mechanically speaking, the 1950 Plymouth is basically similar to 1949 models, being powered by a six-cylinder engine of 217.8 cubic inches. Bore and stroke are 3 $\frac{1}{4}$  and 4 $\frac{3}{4}$  inches, respectively, indicating that no block changes have been made since 1942. Power output, however, has been increased to 97 hp at 3600 rpm by the use of a 7:1

compression ratio head, giving 0.45 hp per cubic inch.

As with earlier models, full-pressure lubrication is supplied to the main, lower connecting rod and camshaft bearings. The camshaft is chain driven and all bearings, except the rear, are removable. Four-ring pistons are used, with the top compression ring being chromeplated for corrosion and wear-resistance.

Power is supplied to the semi-floating rear axle through a tubular 2 $\frac{3}{4}$ -inch propeller shaft, suspended on two roller bearing universal joints. Various rear axle gear ratios are 3.9:1 (P-20 model), 3.73:1 (P-19) and 4.1:1 (Station Wagon).

Frame and suspension are conventional, with no changes, except for an increase in rear tread of 2 $\frac{1}{2}$  inches.

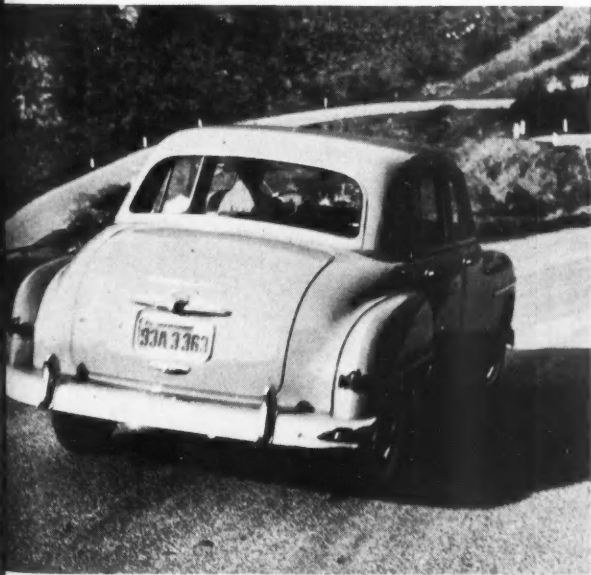
Body changes include restyled and lengthened rear fenders (bolted on for easy removal), a more massive grille, and a larger rear window.

To sum up our impression of the 1950 Plymouth, it is a car with riding comfort, handling ease and good visibility. Although it is somewhat lacking in acceleration characteristics, the reliability of any Chrysler product makes this car worthy of a prospective buyer's consideration.

#### GENERAL SPECIFICATIONS

|                     | P-19 (De Luxe)                   |                     | P-20 (Special De Luxe) |                     |                     |
|---------------------|----------------------------------|---------------------|------------------------|---------------------|---------------------|
|                     | 3-Pass.                          | Sub-urban           | 2-Door                 | 4-Door              | Club Coupe          |
| Overall Length      | 185 $\frac{1}{8}$ "              | 186 $\frac{3}{8}$ " | 186 $\frac{1}{2}$ "    | 192 $\frac{5}{8}$ " | 192 $\frac{5}{8}$ " |
| Overall Width       | 73 $\frac{1}{4}$ "               | 71 $\frac{3}{4}$ "  | 72 $\frac{7}{8}$ "     | 73 $\frac{1}{4}$ "  | 73 $\frac{1}{4}$ "  |
| Tread (Front)       | 55 $\frac{1}{16}$ "              | *                   | *                      | *                   | *                   |
| Tread (Rear)        | 58 $\frac{1}{16}$ "              | *                   | *                      | *                   | *                   |
| Wheel Size          | 15x4 $\frac{1}{2}$               | *                   | *                      | *                   | *                   |
| Tire Size           | 6.40x15                          | *                   | *                      | 6.70x15             | *                   |
| Horsepower          | 97@3600                          | *                   | *                      | *                   | *                   |
| No. of Cylinders    | 6                                | *                   | *                      | *                   | *                   |
| Bore & Stroke       | 3 $\frac{1}{4}$ x4 $\frac{3}{4}$ | *                   | *                      | *                   | *                   |
| Piston Displacement | 217.8                            | *                   | *                      | *                   | *                   |
| *Identical          |                                  |                     |                        |                     |                     |

PHOTOGRAPHS BY WALLACE G. PARKS



REAR view of 1950 Plymouth shows many improvements of car  
March 1950



A LOOK under the hood shows a compact engine installation

Thirteen



# ROAD RACING in BRAZIL

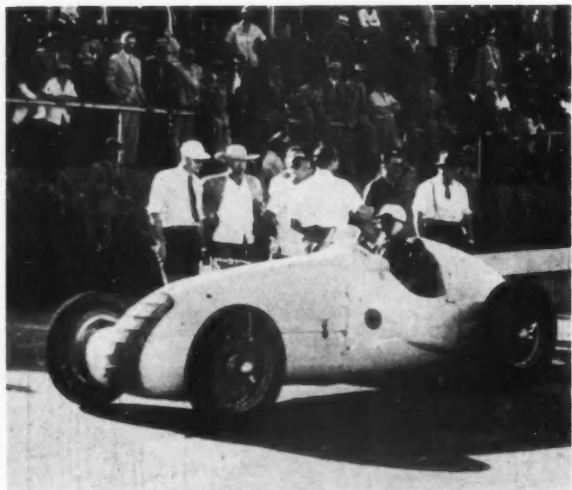
*Text and Photographs by John Treacy*



ALFA-ROMEO roadster on Interlagos Circuit, Sao Paulo, Brazil



GEORGES RAPH in 4 1/2-litre Alfa-Romeo on Interlagos Circuit



CHICO LANDI, Brazilian champion, in his 3 1/2-litre Alfa Romeo  
Fourteen

STRONGLY influenced by its European counterpart, automobile racing in Brazil differs noticeably from United States practice and offers a new experience to the North American racing fan who, though interested in European cars and drivers, seldom sees them in competition in his own country. While residing some three years in Brazil, I became an enthusiastic follower of the sport. I witnessed numerous races at the famous Interlagos Circuit, located in the suburbs of Sao Paulo, a metropolis of nearly 2,000,000 people, situated some 300 miles southwest of Rio de Janeiro. (Most of the American motor manufacturers have large assembly plants in industrial Sao Paulo.) Sao Paulo residents, called Paulistas, are of predominantly Italian origin, a fact which helps to explain their love of racing and the presence of Italian cars and drivers in their major races. This does not imply any lack of racing blood in the native Brazilian, as anyone can attest who has ridden even briefly in a taxicab piloted by any Latin, Brazilian or otherwise. Behind a steering wheel the average Latin is a fearless daredevil, whether he be racing champion, taxi chauffeur or bus driver. Transported to the speedway, this love of a roaring engine produces some very interesting competition.

Interlagos is a paved five-mile course that includes some 15 variously banked curves, hairpin turns, three or four straightaways of varied lengths, and some rather steep hills. Since the course occupies a natural bowl, spectators fortunately can see most of the circuit from any of numerous vantage points. The meets thus combine the thrills of road racing with the visibility of the conventional oval track. Races are sometimes run in a clockwise direction, a switch which, because of the relation of hills and curves, surprisingly affects cars and drivers.

Familiarity with the course and skill at cornering, braking and accelerating are dominant factors in competition. Speeds vary from as little as 30 or 40 mph on the

*(Continued on page thirty)*



CARS assembled in pits at the Circuit include Maseratis, Alfas

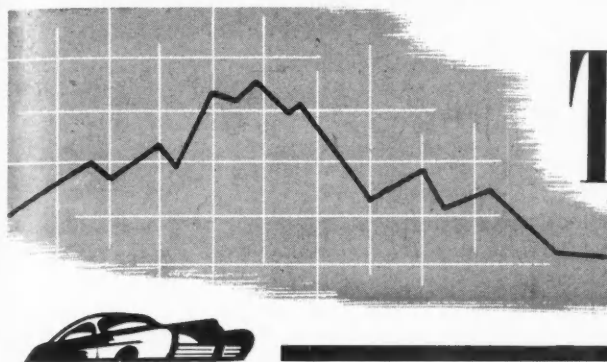
*Motor Trend*



# TRENDS

IN DESIGN •

Compression  
Ratio  
vs.  
Octane  
Rating



IN THE year preceding the first showing of the new Oldsmobile "Rocket" and Cadillac overhead-valve engines, there was considerable publicity on a radically new, high compression engine known as the Kettering engine. There were articles and comments in the press, technical trade journals and magazines about the advantages to be gained by the use of this 12:1 engine.

The people were puzzled—many of them had already been taught that through higher compression ratios increased thermal efficiency and better gas mileage were possible—but if this were true, why wasn't such a change made previously?

Then, with considerable fanfare, the new cars hit the road. The people looked and were amazed. What had happened to the Kettering engine of 12:1 compression ratio? The Cadillac and Oldsmobile valve-in-head engines had compression ratios of only 7.5:1, slightly higher than the optional compression ratios available on engines as far back as 1941!

Why the compromise? What was the reason behind this lowering of intended compression ratio? Was it a mechanical problem? Or was it that the trend of fuel and engine requirements had failed to go hand-in-hand?

It was apparent that an out-of-phase situation had been created by the introduction of the Kettering engine and constant talk of extremely high compression ratio engines. During the war, although passenger car production was practically at a standstill, research and development had to advance. Petroleum production was geared to complete capacity. This production, however, was of its pre-war product and there were effectual regulations limiting improvement in octane number. Immediately after the war the travel-hungry public forced the quantity production of motor gasoline far above expected demands. This left little opportunity for the petroleum industry to meet the pace of increased octane requirement, much less exceed it for the new era of ultra high compression ratio engines such as the Kettering engine.

This spread between the octane number requirements of the 10:1 and 12:1 compression ratio engines and the practical demands of the public for more gasoline of existing octane levels meant either tremendous investments in new refinery equipment by the petroleum industry or a compromise by the automotive industry.

## Automotive Industry Argument

At this time, when the automotive industry was clamoring for higher octane fuels, the fuel industry was suggesting to the automotive industry that they utilize present octane fuels to better advantage. This, they argued, would

allow both of them to get back in phase.

Using an engineering argument decades old to further their side of the debate, the auto industry stated that the key to higher efficiencies in internal combustion engines is to increase compression ratios. And that if equivalent compression ratios (such as used in diesel engines—14 and 17:1) could be used in spark ignition engines, full-throttle brake thermal efficiencies of 38 per cent could be realized. The reason that automobile engines are in the range of about 6½:1, with a maximum of 25 per cent thermal efficiency is because the engines and fuels have not yet been adequately matched.

Using economy as an argument, the auto industry convincingly stated that large savings are possible by increasing compression ratios to utilize high octane fuels. They do, however, concede the point that if the economics of higher compression ratios are taken into consideration when new engines are designed, these engines can always be adapted to current available fuels. Then, as the higher octane fuels become available, the compression ratios could be increased without major engine changes.

## Fuel Industry Argument

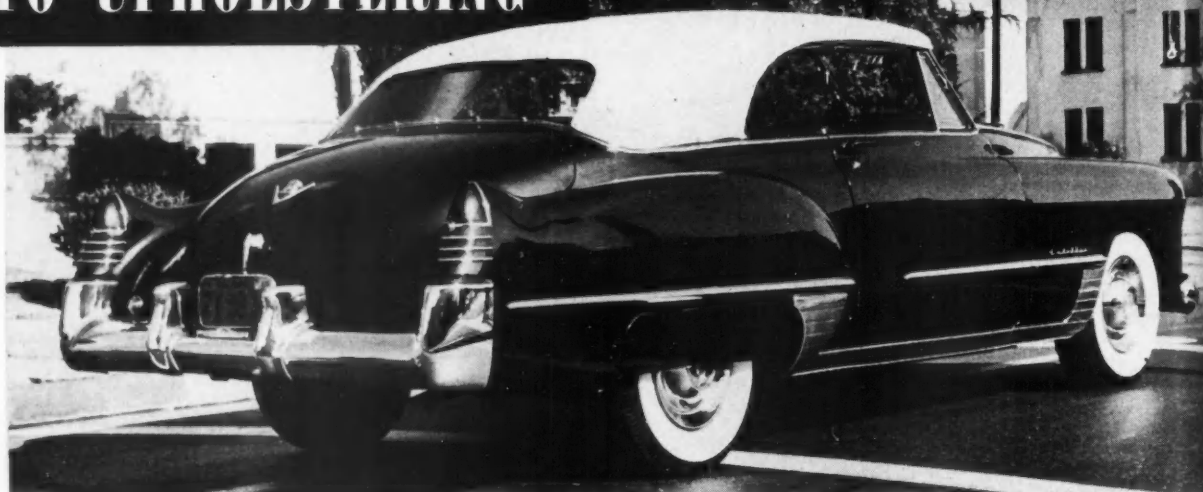
Attempting to refute many of the above statements, the petroleum industry had a definite point in their favor in claiming that higher compression ratios are not an *immediate* necessity. In addition, the fuel industry needs time to meet the present requirements of lower octane fuels and both time and large capital investments to develop still higher octane fuels. They are well aware of the fact that higher octane fuels permit engine operation at higher levels of performance and efficiency.

In one survey conducted by the petroleum industry using a total of 81 cars, the data showed that 80 per cent of '46 and '47 models gave knock-free performance at the most critical condition with an 82 octane fuel, while 95 per cent were satisfied by 87-88 octane. The surveys also indicated the need for a study of part-throttle requirement—for one eight-cylinder 1946 car (with higher-than-normal compression ratio) gave knock-free performance at speeds up to 40 mph when operating under level-road, constant-speed conditions on zero-octane fuel!

Arbitrarily increasing the octane rating for use in higher compression ratio engines does not necessarily mean that car owners will realize the advantages of the increased mpg. It may mean only that they will get more mileage per dollar spent (providing that the octane-increased fuel is not made more expensive than previous fuels), in that they will probably travel more than before. Witness the

(Continued on page twenty)

# AUTO UPHOLSTERING



THOMAS J. MEDLEY

**T**HERE comes a time in every car owner's harried life when his car—known in the month of March as "The Rolling Deduction"—suddenly begins to look like an old floosey. She pops her upholstery at the seams, her door-panels sag and bulge, if she's a convertible, she blows her top, and if she's a hard-top, her head-liner stuffing starts dripping down your neck. In other words, she is one sad car and it is time you pulled her off the street (I better watch my metaphors) and bought her a new dress.

But the average man is at a dead loss when he rolls Mehitabel into the nearest top and seat-cover shop. What's good and what ain't in fabrics, top materials, and natural and artificial leathers? What about airfoam rubber

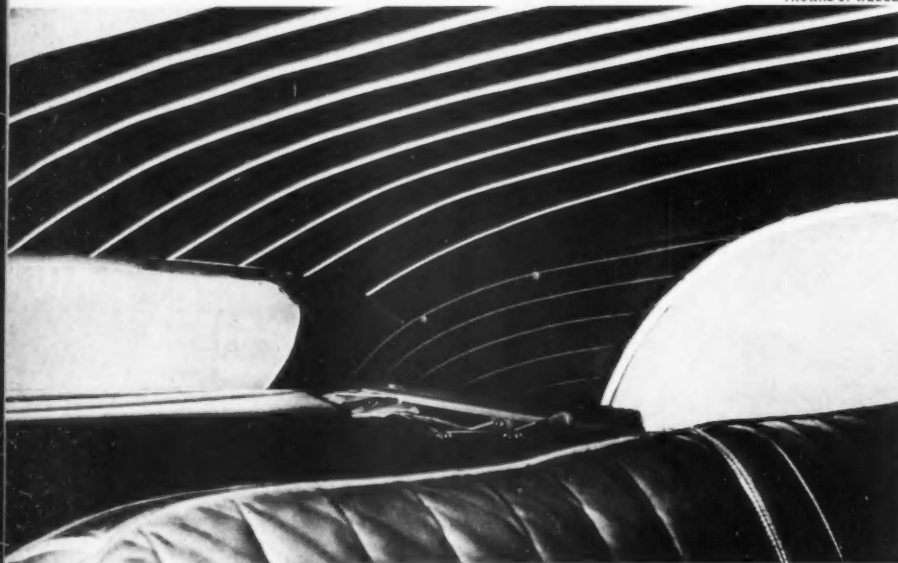
*by George Finneran*

pads? How can I tell if I'm getting what I pay for? How come one guy wants \$50 for the same job another guy is willing to do for \$30? Whazza story here?

Hist! Come over here. Keep this under your hat, but I have here the latest—the Word, so to speak—on tops, upholstery, and all the trimmings! It's true! Right from the style-setting shops of Southern California, from the Paris of the auto fashion world, I bring the latest in plunging necklines, bare midribs, and that "ooh la la" that will make your car the hit of the Fire-

**CARSON top includes inner lining of plastic leatherette and plastic window**

THOMAS J. MEDLEY



Sixteen

**TOP by Carson Top Shop for '49 Cadillac**

man's Ball! Hist! Listen to this.

First, let's talk about the new materials. Back in the early days of the auto, seat covers could be had only in a basket-weave fibre made of cane, which was tough, durable, and came in one color only—natural tan. Now, of course, there are umteen different fabrics in umteen colors and weaves. At Al's Top and Bed Shop, I talked to Al Ortega, who's been putting tops and seat-covers on Los Angeles cars for thirty years. He specializes in the more unique fabrics and designs. For instance, I was shown some mohair leopard-skin covering in both large and small spots, black and white authentic zebra striping on leatherette, white alligator, black alligator, red alligator, and green alligator leatherette, grey rattlesnake leatherette, pure gold leatherette, and, just as I reeled to the floor in a dead faint, out came some more zebra stripes, this time in both velour and sailcloth, and in all colors!

When I'd been revived, Al assured me that this sort of thing was for the more flashy-type car than a four-door '37 Chevy sedan, and I said I thought so too. Actually, once you get used to these materials, they certainly can provide a magnificent interior for a car. While Al was doing my seats in a combination of white alligator and tan leatherette (I have a flashy-type car and very poor sales resistance), Al's convertible top man showed me the latest in top fabrics. Once again, color is the latest word, for I looked at twelve different colors, among them maroon, green, pure white, off-white,

Motor Trend

tans, greys, blues and black. I was told that the darker colors are the most practical in one sense—they don't show dirt or wrinkles—while the lighter colors are better because they resist fading and are cooler in summer.

In the less vivid leatherettes, embossed designs are new and very nice looking. These are plastics which have diamonds, squares, and parallel pipes (about an inch and a half wide pleat or strip) embossed directly onto the material and filled with cotton stuffing, then backed with another sheet of plastic. This gives you that smart piped interior similar to the English tradition, without the expense of having those strips sewn and stuffed by hand. The stuff sells retail for about \$6.00 a 54-inch-wide yard, which is more expensive than plain leatherette, but worth it. In just plain leatherettes, of which there are many brands now, the color selection is tremendous; even purples, lavenders, and violets are being offered. The standard reds, blues, greens, and traditional greys and tans are available in every shading of the spectrum. I was told that the best leatherettes are backed by sateen, as this material will resist tears at the seams the best. Cheap leatherettes can be spotted by their paperish feel, their thin, coarse-woven backing, and their poor embossing on the surface. Good leatherette is heavier, yet pliable, has a smooth sheen to it, has a fine-woven back which is good-looking in itself, and does not show the grain of the sateen backing on its surface.

**PANORAMIC top by Runyan on '47 Buick affords excellent visibility to side and rear**

DALE RUNYAN



BOB TITUS

In the other seat-cover and upholstery fabrics, celanese rayon comes in many varied patterns, the newest being the pin-stripe designs, which are very popular among new-car owners. The traditional plaids, weaves, herringbones, etc., are still available on improved materials, including plastic-and-rayon, pure plastic, rayon, sailcloth, and the fibres. When picking these materials for your car, feel the surface of the cloth for roughness in the weave. Also hold your choice up to the light to determine its thickness;

**INTERIOR by Runyan boasts russet, imported natural steerhide on seats, door panels, door moldings and dashboard**

these two things will determine whether or not the material is worth putting on your car. The cheap fabrics and fibres will snag stockings (for this your girl will leave you) and will wear out quickly due to their extreme thinness. I was advised that some of the pure plastic leatherettes and fabrics have a tendency to rip and tear loose wherever they are sewn.

(Continued on page twenty-eight)





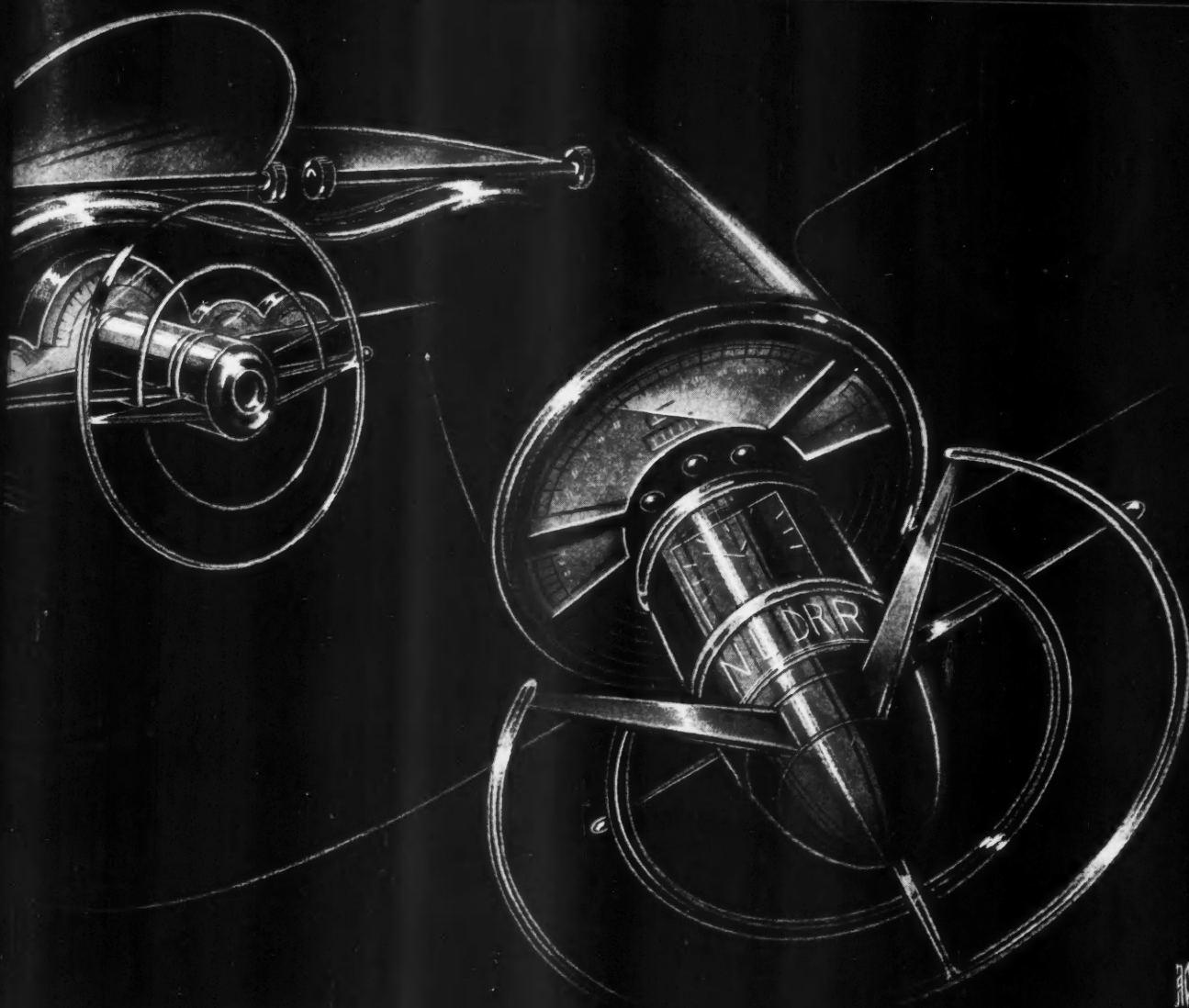
# *Trend of the future*











This portfolio of sketches by Colonel Alexis de Sakhnoffsky covers car interiors with the instrument panel being the main point of attraction.

Since the present trend of putting heavy shrouds around the steering column leaves a certain amount of empty space under that cover, a clock has been fitted into the top portion of the shroud. With higher speeds, it is possible that the angle of the steering column will become sharper until it is almost horizontal. For that reason, one perspective has been shown in such a position. Note that the automatic transmission controls are built into the shroud, which is practical from the visibility standpoint when the column is horizontal. In the upper perspective, note that the instruments

use only half of the dial for the readings. The speedometer needle follows the outside rim, which is a new feature.

In the left hand sketch Colonel Sakhnoffsky portrays a new feeling in floor design with the foot pedal controls built into the floor. These could be built as molded rubber stampings with the initial of the control: for example, A for accelerator, B for brake, D for dimmer, and H for horn.

Interesting points about the upper left hand sketch are that the driver's seat is individual, that there is a special padding at the bottom of the backrest and a roll under the knees. To balance the armrest on the door, an armrest has been built into the seat on the right hand side of the driver.

## Trends in Design

(Continued from page fifteen)

increase in auto travel since before the war until it is now at a height never before attained. More money is being spent for gasoline, despite consistent gains in economy in most postwar cars.

A similar situation to the above can be made as regards air travel. As airplane cruising speeds increase and airplanes become more commodious, travel volume almost invariably increases in relation to the increased speed and comfort of the equipment.

Although the fuel industry indicates that an increase in overall fuel anti-knock quality of one octane number costs about \$300,000,000, they point to a way out—the use of anti-detonant injection together with premium gasolines. Tests with 9:1 c.r. engines have shown that 85 to 90 octane gasolines can be raised to 100 octane or better during performance periods calling for high octane requirements.

### Need for In-Phase Adjustment

Perhaps the fuel industry's most impressive argument for automotive industry cooperation is that the octane number requirements of a 12½:1 engine are so high that it will not operate satisfactorily on any of the automotive gasolines on the market today. And whether or not they can maintain past trends in anti-knock improvement is a serious problem indeed.

While the auto industry could not retool to obtain the advantage of extremely high compression ratios in any one year, neither would it be possible for the oil industry to shift overnight to full production of high octane fuel. This undoubtedly points the way more clearly than any other: the trend toward higher compression ratios and higher octane fuels must go hand-in-hand.

This unfortunate lag of fuel quality behind production engine design has also inadvertently caused a gradual shift in emphasis to a different method of octane rating. There have been a number of different methods for determining octane number for ten years or more. They all stem largely from intentional changes in operating conditions in a single-cylinder cooperative laboratory test engine. Some methods yield octane answers predicting performance in one type of engine or a certain type of driving, while another may give better predictions for a different engine type or driving condition. The most commonly used meth-

od in the past has been the ASTM Motor Method, which did a fair job of predicting octane number performance in prewar and immediate postwar combinations of fuels and automobiles. Some of the new ultra-high compression ratio engines have indicated a preference for the CFR Research Method Octane Number which usually yields a higher number than the Motor Method on the same sample of fuel. As a consequence, many of the gasoline marketers began to use the numbers yielded by the Research Method in their advertising, since it appeared to be a real improvement to announce that they were now marketing 90 octane gasoline instead of 85. In reality, the average car probably would not know the difference under most driving conditions unless it happens to have an ultra-high compression ratio engine, and even then it is doubtful.

### Future Trends

It is apparent that the octane number cannot increase as fast as it has in the past (one octane number per year), since "over \$4,000,000,000 must be spent over the next several years to increase production and refining capacity to meet quantity demands alone." Evidently realizing this, and rather than depend solely on increases in octane number for improved performance and economy, it is apparent that the automotive industry is now designing engines to gain economy in other ways. Witness the reduced friction hp in new engines and the emphasis on good distribution, which actually accounts for a great percentage of mileage improvements.

The answer may be in a dual-fuel system that will supply high octane fuel at high manifold pressures and low octane fuels at low manifold pressures.

In the future, there will undoubtedly be a closer correlation between the automotive design and fuel marketing policies. This can bring about a readjustment in the spread in quality between regular and premium gasolines and the methods of rating. It can also result in the manufacture of premium gas, 20 per cent of which will be sufficiently high in quality to meet requirements of the proposed high compression engines.

### Summary

Most motorists know that higher

compression ratios give increased thermal efficiency, in turn bringing about greater power output, and fuel economy. But rather than a sudden concentration on high compression engines, it is logical that more emphasis should be placed on better fuel distribution, decreased engine friction and generally improved fuel utilization in present engines.

The steps that have been made now to increase compression ratio capacity (while desirable) can be said to be premature from several standpoints: (1) the new designs have shown that other things besides compression ratios can be improved upon; (2) the manufacturers were forced into a more expensive type of engine construction and a noisier type of operation (overhead valves) by the anticipation of compression ratios thought possible a number of years from now. Actually, an improved design "L" head engine, which breathes adequately at compression ratios up to 7½ and 8:1, would have been cheaper and would have easily taken full advantage of fuels available.

The fact that great increases in fuel octane number may be several years away should not impede the progress possible by the automotive industry in designing and producing engines with increased performance and economy. If the manner in which anti-knock quality is used in present cars can be improved, and study of the effect of various design changes on anti-knock requirements is made, these two items alone may point the way to the goal desired by both the petroleum and automotive industries.

## CALENDAR OF EVENTS

NOTE: In answer to many readers' requests, this Calendar of Events will appear in each issue of MOTOR TREND—Editor.

| Date       | Event   | Place                       |
|------------|---|-----------------------------|
| Feb. 6-10  | National Auto Accessory Mfrs. Assoc. Annual Exposition        | New York, N.Y.              |
| Feb. 15-16 | Mobilgas Economy Run  | Los Angeles to Grand Canyon |
| Feb. 16-19 | Pacific Automotive Show                                       | San Francisco, Calif.       |
| Feb. 18-26 | Chicago Auto Show   | Chicago, Illinois           |
| Mar. 23-26 | Southwest Automotive Show                                     | San Antonio, Texas          |
| Apr. 15-23 | Soc. of Motor Mfrs. & Traders, British Auto & Motorcycle Show | New York, N.Y.              |

Motor Trend



# HOW TO RESTYLE?

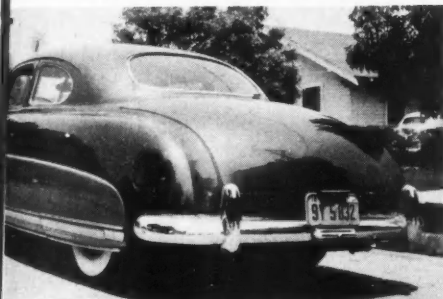


## Which Method of Restyling Do You Prefer?



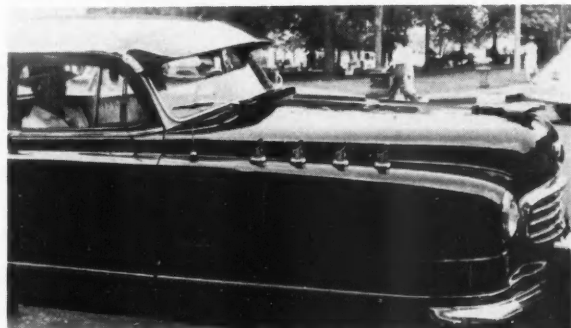
THOMAS J. MEDLEY

**TYPICAL** example of car customized by removal of "frills" is this '49 Ford, which has had the radiator ornament removed to give the hood a smooth appearance



THOMAS J. MEDLEY

**FAVORED** on the west coast is this type of restyling. Trunk latch is hidden, license plate set on bumper, and taillights set in bumper guards. This '48 Hudson is owned by Bill Tuttle of Tustin, California



FRED W. FISHER

**MIDWEST** creation is this '49 Nash Ambassador with four stacks extending upward from the front fender. Is this the trend in customized styling? Since the introduction of the 1950 Buicks, portholes have appeared on many cars across the country

**CAR OWNERS** are forever seeking individuality in their standard manufactured automobiles. Seeking to make their cars "different" has been a pastime of the motoring public ever since automobiles began to be produced by mass production methods.

What is the trend in customized styling today? Is it the addition of certain eye-catching ornamentation? For years the accessory shops have had a lucrative business from car owners who "deck out" their cars in ornamental splendor. Some of these extras common on the roads today include metal sun visors, chrome exhaust stacks, port-holes, extra lights forward and aft, fender flaps, extra radio aerials, bumper guards and other frills.

In the other group of "customizing" hobbyists are motorists who believe in smoothing off their cars. This process may be only the simple removal of the ornamentation, dechroming, and sealing of the car to give it a port-less, louver-less, one-piece look. Some of these enthusiasts go even further by chopping (lowering of the top by removing a section of the top), dropping the body and frame as low as possible, body-sectioning (removing a section from the center of the body all the way around) and rolling the fenders so that they will clear the tires.



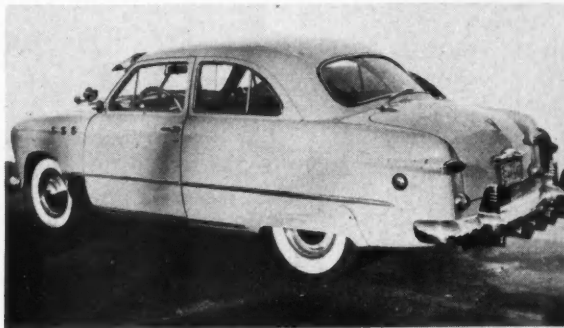
CHIVÉ MOTORS

**TYPICAL** example of car customized by addition of "frills" is this '50 Studebaker Commander owned by Chivé Motors of New Orleans, Louisiana. Note exhaust stacks extending from hood and three pipes from the side of each rear fender

Is this the type of customizing that has caught the fancy of the car owners?

Accompanying photographs show the two distinct types of individualizing as practised by car owners in every section of the country. **MOTOR TREND** is interested in the preferences of its readers. Which type of customizing do you prefer?

If you are interested in voicing your opinion on "How to Restyle," send your letter (with photographs if you wish) to How to Restyle, **MOTOR TREND**, 548 South San Vicente Blvd., Los Angeles 48, California.



ED COLOSKY, JR.

**PORTHOLES** and extra chrome are featured on this '49 Ford owned by Ed Colosky, Jr. of Minneapolis, Minnesota. Four exhaust pipes are used "to reduce the high back pressure . . . of a full-race engine." Not visible is a Cyclops eye in the grille



## A NOTE... To Our Readers

The questions below are being asked in order to enable us to give you, our readers, a better magazine. You will do us a great favor by filling in the blanks as they pertain to you. Mail the questionnaire as soon as possible. You will note that your name and address are not asked; therefore, filling of this questionnaire will bring you no solicitations of any sort. Thank you for your cooperation.

Male\_\_\_\_ Female\_\_\_\_ Age\_\_\_\_

Employment\_\_\_\_\_

Monthly Income\_\_\_\_\_

Do you prefer detailed illustrations to written descriptions of cars and equipment?

Yes\_\_\_\_ No\_\_\_\_

Do you like the road tests? Yes\_\_\_\_ No\_\_\_\_

What type of articles do you like? (Number in order of preference) Technical\_\_\_\_ Racing\_\_\_\_

Feature\_\_\_\_ Cars\_\_\_\_ Design\_\_\_\_ News\_\_\_\_

What cars do you like? (Number in order of preference) Stock\_\_\_\_ Foreign\_\_\_\_ Custom\_\_\_\_

Classic\_\_\_\_ Antique\_\_\_\_

Do you buy every issue of Motor Trend?

Yes\_\_\_\_ No\_\_\_\_

How many other persons read your copy?\_\_\_\_\_

Do you own an automobile?

Make\_\_\_\_ Year\_\_\_\_

List other makes if you own more than one

★ ★ ★

ESTIMATED MONTHLY MILEAGE (FOR ALL YOUR VEHICLES) \_\_\_\_\_MILES

DO YOU LIKE "DRESS-UP" ACCESSORIES ON YOUR CAR? YES\_\_\_\_ NO\_\_\_\_

DO YOU DO YOUR OWN MAINTENANCE? YES\_\_\_\_ NO\_\_\_\_

ARE YOU AN ACTIVE MEMBER IN ANY AUTOMOTIVE CLUB OR ORGANIZATION?

YES\_\_\_\_ NO\_\_\_\_

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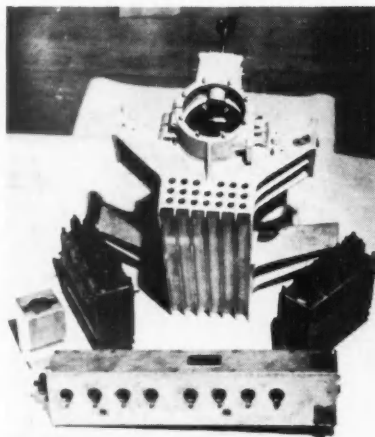
Twenty-two

## Cars of Character —the Bugatti

(Continued from page nine)

piston displacement of a robust locomotive, he was building pocket-sized engines with the exquisite flawlessness of a fine Swiss timepiece . . . a crazy-like-the-well-known-fox idea that contributed toward the Bugatti's record of more racing wins than any other car in history.

As with all things famous, the public knows they're great but seldom knows how or why. So, for a change, let's examine some of the Master's machines. In doing this, it helps to recall that *Le Patron* was a connoisseur of many things, including fine horseflesh. The expression *pur sang*, thoroughbred, recurred continually in his references to machinery. He adopted the outline of a racing horseshoe for his radiators,



IN ADDITION to cooling fins, crankcases were penetrated by tubes for air-cooling of oil. Block, head, and valve assembly can be picked up easily with one hand

used drawings of fine steeds to advertise his cars to gentlemen-sportsmen. The thoroughbred metal beast was the goal of his creative effort and the Type 13 is the original *pur sang* Bugatti.

Frame, running gear, and engine were all conceived and executed with that utter cleanliness of form and function which strangely stirs the emotions of the lover of the ultimate in superb machinery. This was the first of EB's mills to use ball and roller bearings in the lower end; it had four cylinders, eight valves, an oh stick, drew 1327 cc (81 cu. in.) and had a bore and stroke of 65 by 100 mm (2.56 inches by 3.94 inches). The engine looked like a jewel case, all burnished aluminum and brass. This car, treasured examples of which still exist in a healthy state, established the marque on really firm ground.

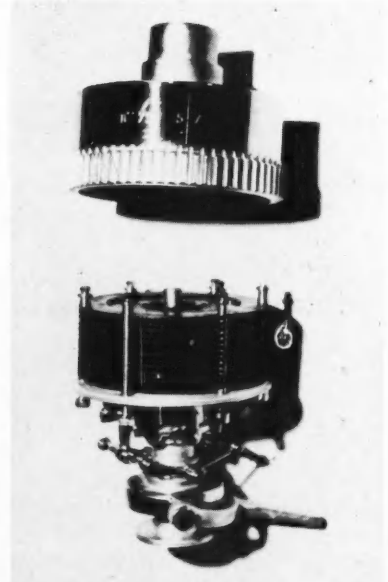
In 1914, in spite of conflicting records, it seems that the Types 22 and 23 appeared. They were the Type 13 bored out to 68 mm, with four valves to the cylinder instead of the usual two, and a displacement of 1453 cc (89 cu. in.). Ball main and roller rod bearings became the rule for racing models and the 22 was so equipped. The 23, a touring job, had the double-race ball mains but used poured rod bearings.

The factory had hardly tooled for production of these cars when the Kaiser War broke out. A handful of 22's were put on ice by EB and, six years later were raced against Europe's biggest, fastest, and best at the 1920 Le Mans Grand Prix. Bugatti came in first and fifth, much to the renown of the breed. After all, everyone was convinced that immense weight was essential to road-holding, yet the tiny Bugs won on that very count!

The following year the factory sent a team of four cars to the fast, grueling Brescia G. P. They roared into the first four winning spots, the 22 was christened the "Brescia Bugatti," and Molsheim had more orders than could be filled.

The Bugs had made an immense impression upon the racing world up to this point and EB's almost unheard of policy of selling his racing models over the counter while they were still "hot" won him friends, business, and fame. This policy was, of course, largely responsible for the almost unbelievable number of Bugatti wins piled up during

(Continued on page thirty-three)



TYPE 35 flywheel, with teeth as luxury feature . . . and all-in or all-out clutch

Motor Trend



**B**IGGEST news out of Detroit this past month was from Nash—the exciting news being in the form of a two-place convertible, with a possible future market as the family's second car (featured on page six). Although Nash is the first one into this new market, you can be certain they won't be the last.

IN his first letter to Packard dealers as president of the Packard Motor Car Company, Hugh J. Ferry forecasted a new production record of upwards of 110,000 Packards in 1950. This will be more than 5,000 cars above the post-war production high set in 1949.

WITH the Buick Special combination of grille and bumper apparently meeting with more favor than predicted, Buick has now adopted this feature on both of their more expensive cars—the Super and the Roadmaster. This feature enables the overall length of the cars to be shortened five inches without shortening the wheelbase. Will this start a trend?

Perhaps the most important change of the new Buick line is the announcement that prices will be from \$65 to \$310 under 1949 prices. However, the most interesting is the introduction of the F-263 engine, which is Buick's new high compression engine for the Super series. It develops 124 bhp (or 128 bhp with Dynaflow), has a cubic inch displacement of 263.3, compared to the previous displacement of 248.1. Bore and stroke are  $3\frac{3}{16}$  inches and  $4\frac{1}{8}$  inches, respectively.

LATEST news on the Ford automatic transmission is that it will appear on the 1950 model cars in late summer. It will be a torque converter type with mechanical step-up and will sell for about \$150. According to L. D. Crusoe, V.P. of the Ford Motor Co., it will not be necessary to add more power to accommodate the automatic transmission. When questioned on his recent trip to Los Angeles in regard to overhead valves, Mr. Crusoe said, "We intend to keep our powerplants modern." Draw your own inference.

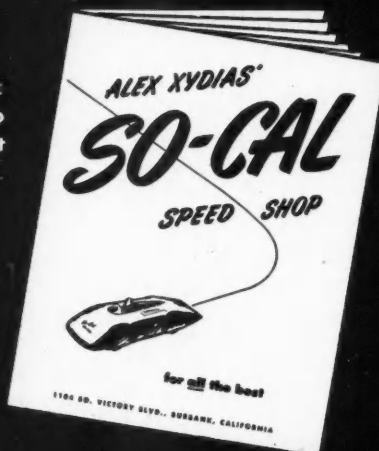
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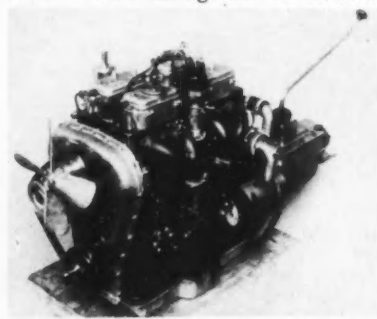
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Twenty-three

# tendence continente

## TRANSATLANTIC

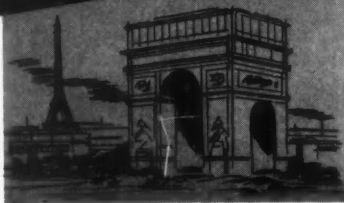
**ENGLAND:** Last month we predicted an inevitable return to small car production here. Austin has come through with the first fulfilment: early re-issue of the classic "Seven," Britain's "Model A," but smaller . . . Not to be caught napping on other fronts either, Lord Austin's group is in the news with the purchase of a patent for a gas-turbine driven car. Under this patent the 30,000 rpm turbine drives an oil pump which operates hydraulic motors mounted in the wheels . . . a nice solution of the constant-speed turbine problem . . . Expansion Notes: The Nuffield Group (MG, etc.) has opened a plant in Holland which will turn out 6,000 Morris cars yearly. Standard Motors (Standard, Triumph, etc.) has opened a factory in Canada . . . should mean savings for U. S. Tri-



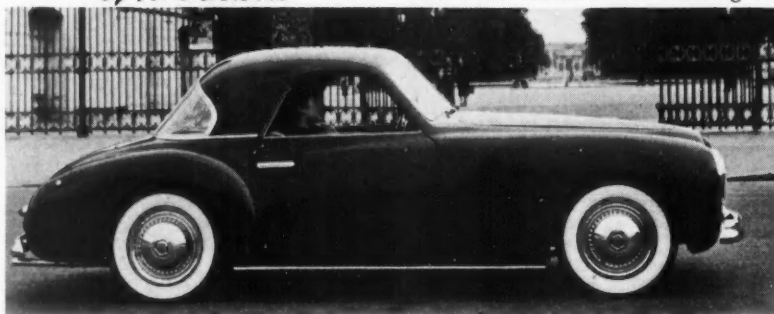
**LEA-FRANCIS** powerplant. Position of camshafts in head is indicated by high timing gear case. Valves are inclined

umph car and bike fans . . . Pictured on this page is one of England's more interesting engines and one of the conservative bodies it lives in. Most outstanding feature of the rugged, compact Lea-Francis mill is the patented valve arrangement: twin camshafts high in the head activate inclined valves in domed chambers by means of stubby, light pushrods. Output is 95 bhp at 4000 rpm of the 85x110 mm, about 152 cu. in. plant . . . A big British car show is set for Grand Central Palace in New York, April 15-23, to include cars, motorcycles, Diesel engines, and other such . . . Citroen owners: The Citroen Car

Twenty-four

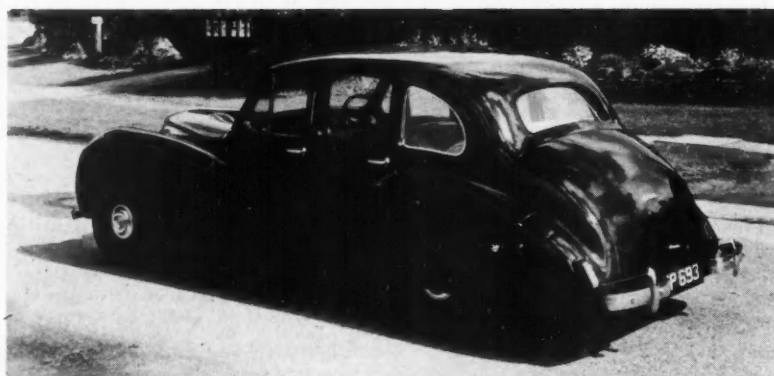


by A. Devereaux



**FRENCH 1200 cc (73 cu. in.) luxury—the Simca "Huit"—combines sleekness, visibility**

Club of England has come up with a magazine called The Citroen. Interested? Write J. Beresford-Layten, 103 Kingston Hill, Surrey . . . Forty-seven million Marshall Plan dollars have been turned over to the British for badly needed modernization of oil-refining and steel industries . . . Indicative of the sporting trend at Jaguar . . . "Lofty" England, ex-mechanic for B. Bira and Dick Seaman is Jag's service manager . . . New Car: Nuffield brought out its 1950 MG Midget, Series TD, incorporating worldwide suggestions. Principal improvements: wishbone—coil spring i.f.s., rear piston-type shocks, rack and pinion steering, optional left or right hand drive, 5.50x15 disc wheels, body four inches wider.



**QUALITY** and performance go with four-cylinder economy in the Lea-Francis "18"

## NEWSLETTER

A five-minute ride showed that this famous car turns sharper and has more comfort.

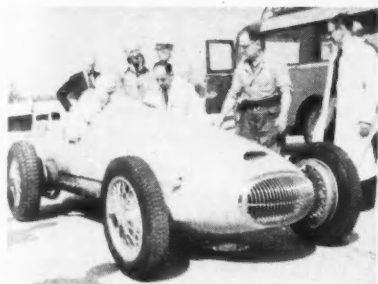
**FRANCE:** Motorists are cheering the

repeal of gas rationing and, coincidentally, a new French word has been officially coined: *autoroute*, the equivalent of German *autobahn* and Italian *autostrada* . . . The 1200cc (73 cu. in.) Fiat-based Simca chassis finds no need to change, but coachwork improves and broadens. You can now get anything from the sleekest GP type single-seat racer to a sharp panel delivery truck or sport tourer with American-Italian-French lines like the Simca illustrated here . . . top speed about 85, fuel consumption 32 mpg.

**GERMANY:** The DKW (pronounced Day-Kay-Vay and fondly known as "Das Kleine Wunder") is back in business in the Western zone. About the size of the Crosley, it has a straight-

Motor Trend





**GREAT** expectations in France—testing the CTA Arsenal, gov't-subsidized car

three 55 cu. in. engine stowed in the rear, pulls 28 bhp. Volkswagen, too, is going strong.

**SPORT:** Pawns are being marshalled on the 1950 Grand Prix chessboard and this promises to be the most exciting racing season since the late thirties . . . New: the BRM, product of the British Motor Racing Trust. Raymond Mays, perennial hill-climb champ and guiding force behind the beautiful prewar ERA racing cars, has turned the trick of the year . . . convinced 160 British manufacturers that international racing supremacy is the most convincing advertisement in the world. Result: money, materials, and talent have been pooled to produce an awe-inspiring challenger having a two-stage blown V-16 mill with two oh sticks per bank. Bore and stroke are 49.53x48.26 mm, giving 1487 cc (90.7 cu. in.) displacement. Bhp is 400 plus at the modest rate of 12,000 rpm. Bhp to dry weight ratio is about 1:4 but top speed is still secret . . . The already-announced French CTA Arsenal, a gov't-subsidized racing car, has yet to make itself felt in G. P. racing, as the summary below shows. The car is the handiwork of the engineer Lory, of 1½-litre Delage fame, and has all the adornments peculiar to the modern G. P. job and then some. The 60 x65.6 mm mill has staggered blocks rather than fork and blade rods. The lower end runs on centrifugally lubed roller bearings and on top there are 16 valves and four gear tower driven sticks. Two Roots blowers in series help to produce close to 300 bhp at 3000 rpm.

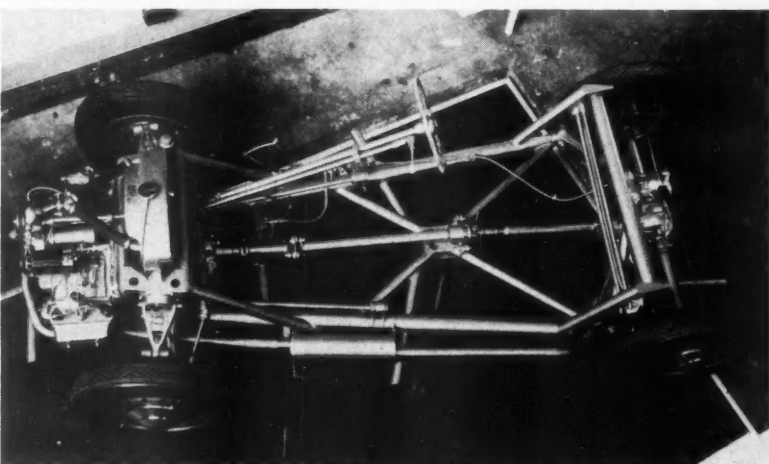


**FAST** 3½-litre Delahaye. Dubos coachwork with dubious amount of overhang

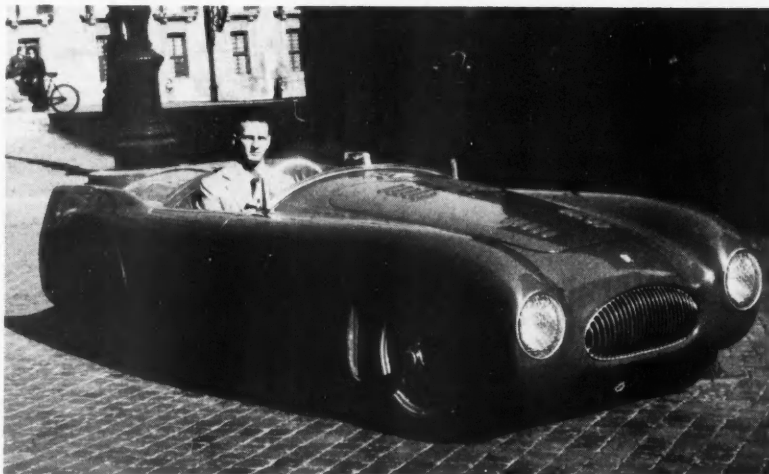
March 1950



**ROVER** Seventy-Five for 1950 is lower and wider than previous models. Engine is six-cylinder of 128.3 cu. in. capacity with compression ratio of 7.25:1, delivering 75 bhp. Four-speed transmission is used. Suspension is independent in front, semi-elliptics in rear. Hydraulic tubular shocks are used at all 4 wheels, wheelbase is 111 inches



**NEW E.R.A.** Javelin chassis has all tubular frame with three-inch section straight side members. Frame is light but has extreme rigidity through "X" construction and triangulated struts. Suspension is by torsion bars; independent in front. Wheelbase, 93 inches; front tread, 51 inches; rear tread, 49 inches. Engine mounted in front of wheels is highly tuned version of Standard Javelin 1½ litre (91.5 cu. in.) four-cylinder, horizontally-opposed, overhead valve engine, with 1486 cc (110.6 cu. in.) displacement



**1946 CISITALIA** two-seater Sport Special has a four-cylinder, ohv engine of 1090 cc (66.5 cu. in.) displacement, delivering 60 bhp at 5500 rpm. Wheelbase is 94½ inches

COURTESY OF ARNALDO ADAMI

Twenty-five



## Classic vs. Restyled

(Continued from page eleven)

when he tromped on the throttle at five mph in high and when he tromped on it at eighty—he'd get smooth, gratifying response. And if he took his monster out on the highway, he could set it at anywhere from 50 to 80 mph and hold it there for five or six hours without mental, physical, or future financial strain.

Gas eater? Definitely yes—but for the above advantages, the difference between 12 mpg and 18 mpg—which is roughly a comparison between a highway average for a Packard 12 versus a 1947 Chevy six or Ford V-8—the monetary difference of  $\frac{2}{3}$ -cent per mile at today's prices hardly seems to be an unfair price to pay for those advantages. We mustn't forget that the safety factor on these cars was excellent—look at the fender and body metal of these cars, drive one down the street for a block and notice the very comforting feeling of good, solid metal in front, back and all around you. Even though most of these cars had mechanical brakes, the vacuum booster that went with them gave you tremendous braking power without the usual disadvantage of the mechanical brake (braking effort) or the horrible disadvantage of the hydraulic (blowing the master cylinder).

And these cars were pretty. Pretty in the sense that their lines were graceful—even today's GM cars, particularly the Pontiac, attempt to achieve the swept-down-and-back lines of the LeBaron Chrysler Imperial phaeton—and pretty in the sense that they were utilitarian or functional in design. They had excellent road clearance—yet looked low to the ground; you could get in and out of one easily; and their good hood design and engine accessibility are both factors in which present day design are notoriously weak. Chrome was used the *right* way—to accentuate the design, not scattered here and there with no comprehensive purpose as it is nowadays. Visibility over those long hoods is amazingly good, believe it or not, and sitting behind the wheel of one of the classic cars is an enjoyable experience for the auto enthusiast.

So what was wrong with them? What happened to the classic design that you don't see around any more? Well, for one thing, the long hood complex that adroit Detroit sales promotion men had given the American public—you know, the snob appeal of

(Continued on next page)

## NEW YORK HILL CLIMB

### Delahaye Wins Motor Sports Club Event

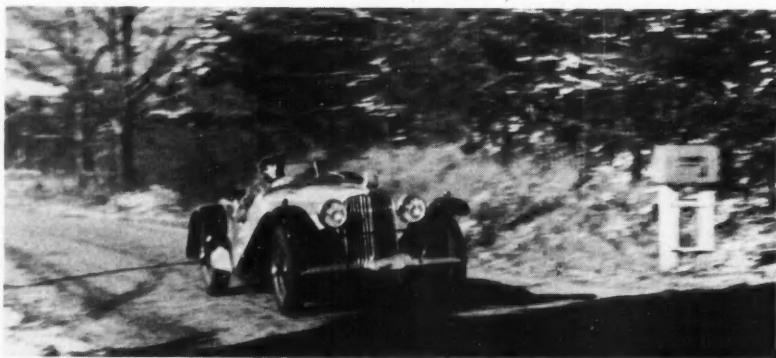
Text and Photographs by H. Wicand Bowman



PICTURED here is the 216 cu. in. Delahaye 135MS, winner of the Motor Sports Club of America hill-climb contest held at Keene, N. Y. late in the fall. The car was driven and is owned by Robert S. Grier of New York City. The body is by Figoni et Falaschi, Paris designers and builders. Car is powered by a six-cylinder, overhead valve engine, equipped with three carburetors and was manufactured in 1937. Overall length is 178½ inches, height is 51 inches and overall width is 75 inches. With a 7.9:1 compression ratio, the engine develops 135 hp and is capable of better than 100 mph



GEORGE FREUND, in an Olds 88, approaches the finish line 1,000 feet above and 1¼ miles from the start. He finished second. 51 members in 21 cars competed in the week-end events, which included a 270-mile control-trip from New York City to Lake Placid



DAVID MITCHELL, Brooklyn, N. Y., is pictured in the hill-climb event in an all-aluminum bodied 1937 model 120 cu. in. A.C. The initials A.C. are derived from the original name of the British company, Auto-Carriers, Inc. The engine is of six cylinder aluminum block design, wet cylinder liners. Power output is about 74 bhp at 4500 rpm

(Continued from preceding page)

driving a car that looks faster than the guy next door's car—this longer-the-hood-the-more-powerful-the-engine complex couldn't hold up when modern cars, with only a few feet of hood out in front, began to pass the big jobs on the highway. Then, too, the classic design is basically a European styling, and young Americans have always had a dislike of copying anything foreign—good or bad. There were a lot of drawbacks to the cars of the classical school which gradually affected their popularity—things like outsize tires (7.00x17, 7.00x18, 7.00x19), parts unavailability, and the actual scarcity of these cars on the used car market. And one more big drawback—as I mentioned before, these cars were designed for long service without major overhaul, but when you did have to go into them, your rebuilt job could really run into dough and usually, by the time a good classic came on the market, you were the one who got stuck with the rebuilt job.

Now, what about the "Restyled," "Customized," "Hollywood Styled" car? I refer to what the long-hood boys so sneeringly term "Blister-boxes," "Jello-molds," "obese uglinesses," and other emotion-ridden names and/or descriptions. This California phenomenon which has slowly but surely crossed the Rockies and spread into the East and South is now the numerically superior group of individualistic car owners in the country today, outranking in numbers both the classic and antique car owners in the U. S. What is a "restyled" car? According to one of our readers, a Mr. Jackson of Washington, D. C., "they show our own personal arrangement of what a mass-produced car could or should look like . . ." according to another, Tom McWilliams of South Gate, California, ". . . (They are) . . . the creative efforts of car owners who wish a car with a touch of individuality and which stands out from the ordinary (car) . . ." Both of these definitions I accept as being extremely accurate, fair, and a sincere attempt to translate an idea into words. I have heard restyled cars called "cleaned-up stocks," which is also a good terse description. The very name the group itself has tacked onto its cars—restyled—tells its own story. These cars are not redesigned, nor are they truly custom cars, because their basic make can practically always be recognized

(Continued on page thirty-one)

March 1950

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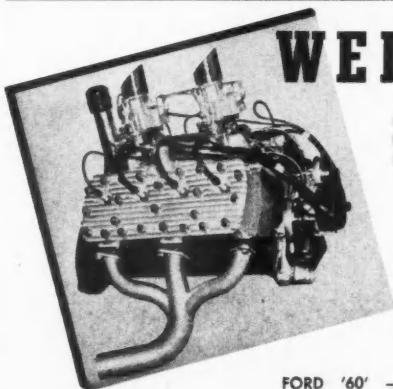
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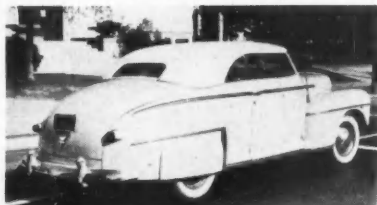
FORD '60' — STUDEBAKER — CHEVROLET — MERCURY

Twenty-seven

## Auto Upholstering

(Continued from page seventeen)

I watched Al at work re-upholstering a car. This was a complete job, door panels, headlining, and new seats for a '41 Chevy club coupe. First, the headlining was carefully removed and used as a pattern for a new one, in this case, a grey woolen mohair. When the headliner was tacked in, the door panels were removed, and thrown away. Al carefully cut new panels from stiff, composition cardboard, tacked these in place and glued a blue cotton padding on top of the cardboard. Then the leatherette the owner had chosen was stretched into place and



NEW feature of '46 Ford Carson top is shortened quarter windows (3½ inches)

tacked down, the tacks covered by matching trim strips. The old upholstery was pulled off the back and bottom of the front seat next, until only the coil springs remained on the frames. Over these, a sheet of burlap was tied down. Then rolls of cotton padding were stitched to the burlap, an airfoam sheet was stitched through the cotton to the burlap, and, finally, cheesecloth was stitched over the airfoam pad to keep it from sliding around underneath the weight of the driver and passengers. Leatherette, matching the door panels, was then cut to fit the seats, the top centersection first, then the two side pieces, and then a front strip. These were sewn together and tacked down to the seat frames, the tacks covered with trim strips—and voila! She is finish!

My flashy car was now finished and flashier, so I whipped out of there to visit another top and upholstery shop on the other side of town. Runyan's Auto Upholstery shop is perhaps best known for the "Panoramic" convertible top, which has done away with the old bugaboo of the convertible—poor visibility. Made of a Vynlite-type plastic known as UT 1928, this clear, flexible material is highly resistant to abrasion, in contrast to other clear plastics heretofore used for windows. Dale Runyan, a young man with ideas, escorted me around the shop, and gave me his opinion on today's products.

Besides the Panoramic top of his own design, Runyan has done experimental work in convertible tops using Fiberglas about which he said, "Although it takes more time and trouble to put on, and is more expensive than ordinary top fabric, Fiberglas can't be beat as a convertible top material. It's washable inside and out, color-fast (a very important asset) and has practically no stretch."

He has also found that a new DuPont product known as Orlon—a silky, gabardine finished, plastic cloth—is also highly resistant to sun and salt air, the two things which will destroy tops the quickest. Several years ago, he experimented with using an imitation leather for a convertible top on a car down in Texas. Recently, he spotted a car with Texas plates in town and a familiar-looking red leather top. Sure enough, it was his own work, still as smooth as the day he put it on, showing no signs of having been put up and down hundreds of times, as the owner assured him it had, and with no drying-out effects visible. The material used was Kotan Fabrilite, a synthetic leather which costs no more when used for convertible tops than ordinary top material, the best of which is Haartz', according to Runyan. How do you spot good convertible top material? Well, it should be two layers of material bonded together with latex rubber.



SEAT for Buick, upholstered by Runyan, has airfoam cushions, steerhide covered

The fabric should be close-woven, finely textured, and light in weight. Some top material is bonded with neoprene rubber, which has a tendency to tear at the seams.

As for upholstery, Dale is a firm believer in the absolute advantages of genuine leather. No other material, he says, gives you the long-wearing, com-

fortable, luxurious qualities that real leather can give. The Edwards Sports car (featured in MOTOR TREND, January, '50) was upholstered by Runyan in genuine leather, pleated in inch and a half strips, and with a padded dash roll. There are several new-process real leathers on the market, some of which I examined there in the shop, and it is easy to see why many cannot resist the luxury of real leather.

I was particularly impressed with the Branchard Brothers & Lane "glazed antique" and "burnished Castilian" leathers. No artificial leather, no matter how well made it may be, can achieve the rich warm coloring that real leather, expertly tanned and dyed, will have. Dale likes Eagle Ottawa, Guild Hall leathers best, although Branchard Brothers and Lane, Lackawanna, and a few other firms are producing excellent leathers. The thing to look for when buying leather for your car is: does it flex well; does it have a firm front and back surface; and is the back smooth and suede-like? Bad leather will have a hairy, rough-textured back surface, it will be highly flexible (too thin), and usually has a dry, harsh-feeling surface.

Of the many brands of cloth-and-plastic woven seat cover materials, Runyan spoke highly of Lumite plaids, and a new Seran covering with woven four-color stripes, which is very effective for closed cars. His favorite of all upholstery fabrics? Well, he thinks the most striking job he's done so far was a button-tufted natural russet-colored suede upholstery set-up for a customized Ford last year. Another piece of work of which he is very proud was a genuine leather top for a convertible (not to be converted, however), which has worked out extremely well, although a real leather top suffers terribly from weathering. In this case, the problem was licked by a special dressing made by Sturgis M. Sturgis, a custom leather finisher of Los Angeles.

A flying trip through the pedestrians of Los Angeles and we end up at Glenn Houser's Carson Top Shop. Here is the home of most of the customized Fords, Chevys, Mercs, and the other favorites of the Hollywood-styled cars. Basically, a Carson top—and there are many imitators now—is a creation consisting of steel rod ribs padded with cotton, and headlined with one of the vinyl plastic leatherettes. The exterior surface can be either leatherette or standard fabric top material. Glenn Houser told me that the narrow rear



window, heretofore a favorite of the customized car owner, has been equalled in popularity by the "Coupe de Ville" rear window enthusiasts just lately, so look for a change in the look of the Carson tops. The average Carson weighs around 100 pounds maximum, with 35 pounds of that weight being the steel frame. A Carson for the average car runs around \$180 and seems to me well worth it because of the serviceability and smooth good looks it provides the buyer. I was told that attempts to lighten tops by using aluminum hasn't paid off, for the weight decrease is hardly noticeable.

The prettiest job in Carson's shop was a '48 Ford upholstered in black leatherette with white piping, and the headliner on the top in matching black and white. The shop has also recently completed a pigskin upholstery job and also a '49 Cad convert done in a Carson Coupe de Ville style top which is real gone. New cars and customized cars do not constitute all of the Carson Shop's customers, for in a photographic showcase, I saw a magnificent '34 Rolls Royce victoria fitted with a Carson as well as several other experimental jobs built along continental lines. The shop specializes also in laying cloth directly onto solid-top cars to achieve a convertible effect; this practice originated long before the Riviera, Holiday, and Coupe de Ville styling came on the market, and probably was the directing influence of this body styling.

One tip I got from Glenn about upholstering seats which should be passed on is in regard to the trend in creating a long, padded roll along the front edge of the front and rear seats which is very uncomfortable for continued driving. The Carson shop is discouraging this practice and advising all of its customers to dispense with the roll and bring the upholstery out flat to the edge and over, without any roll at all. Another tip consists of the use of a new product for Carson tops. It is a liquid which is sprayed onto a new or old top, available in all colors, which adds "at least a year to a top's life." Information about this product and its application may be had from the Carson Top Shop.

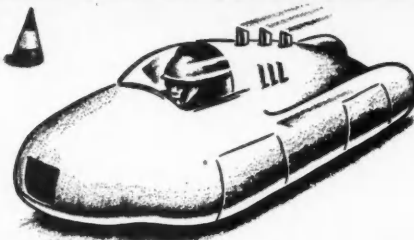
And finally, for those of you who may be without sufficient finances to engage a good shop to do your work, there are several firms now on the market which will mail-order a standard top directly to you for the sum of \$20 on up, approximately.

March 1950

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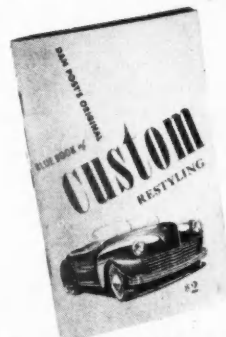
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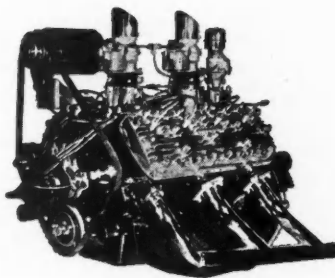
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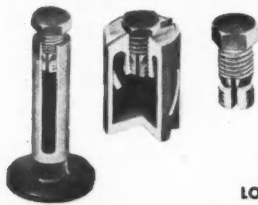
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Twenty-nine



## Road Racing in Brazil

(Continued from page fourteen)

sharp curves to perhaps 140 on the straightaways, highest average speeds being close to 75 mph. Excellent cars in top condition are, of course, a must for winners. All leadings cars are either Alfa-Romeo or Maserati, whether handled by South American or European drivers. Occasionally seen are the new 12-cylinder Ferrari, or the Simca and Cisitalia which are built up from the 1100cc Fiat engine and develop about 65 hp. So far they have offered little competition to the established leaders. American cars, to my knowledge, have not competed, although there is a secondary class of racing for modified cars (called "carros adaptados") which have racing bodies over souped-up American stock engines, mainly Ford and Mercury. These home-made creations, however, cannot stand the pace set by the precision-built Alfas and Maseratis.

International racing meets are held periodically in South America, attracting leading European aces to Buenos Aires, Sao Paulo and Rio de Janeiro, where they compete with the pick of local drivers. Frequent visitors are Luigi Villorresi (Maserati) and Achille Varzi (Alfa-Romeo), famed Grand Prix champions, the Frenchman Georges Raph (driving both Alfa and Maserati), plus a number of the lesser known. Top Brazilian driver Francisco Landi, idol of the local racing fans, offers plenty of competition to the best Europe can offer. "Chico" Landi drove a three litre (183 cu. in.) prewar Alfa-Romeo, a little beaten up in appearance but always in fine mechanical shape. Landi knows the track and is a cool, fast driver, very hard to beat. He was later invited to join a European Maserati team.

One important race developed into a terrific duel between the leader Varzi in a powerful, big 4½-litre (274.6 cu. in.) Alfa and Villorresi in his 1½-litre (91.5 cu. in.), 16-valve Maserati. Villorresi, with magnificent driving, was gaining on Varzi during the closing laps, forcing his car to the limit and breaking the lap record each time around. With less than two laps to go and a fighting chance to win, his right rear tire began to shred. Taking the calculated risk, Villorresi continued at top speed, but his tire blew out on the main straightaway and his car skidded into a crowd of careless spectators seated near the inner edge of the

track. Some were very seriously hurt, although Villorresi was only shaken up. Varzi, of course, went on to win. This again proved that over a long course the larger Alfas are very difficult to pass, although the smaller Maseratis, in the hands of skilled pilots like Villorresi, can be made equal to the task.

All cars are painted in their international racing colors: red for Italy, blue for France, cream-yellow for Brazil, blue and yellow for Argentina. This, naturally, causes some confusion when the majority of cars is Brazilian. The leading European drivers, especially, keep the bodies, engines and running gear of their cars spotless. Drivers are handsomely dressed in colored



LUIGI VILLORESI, famous European Grand Prix champion, tunes his Maserati

outfits, white gloves and helmets (they haven't yet adopted crash helmets), pit crews are uniformly attired, and the entire procedure has the air proper to a fashionable international sporting event.

Next in popular interest at the Interlagos Circuit to the racing car events are the stock car races, participated in mainly by amateur Brazilian drivers. Here again, due to the nature of the course, suitability of the cars for rapid and firm cornering seems about equal in importance to speed and acceleration. Most cars entered are Fords and Mercurys, a fact not hard to understand. Ford and Mercury (at least the models with rigid front axles) are perhaps the most popular cars in Brazil for all around driving, especially on the badly surfaced dirt country roads and the common granite block streets of the cities. Most American knee-ac-

tion cars are too softly sprung for stability, and the same circumstances apply generally to the Interlagos track.

It is my unconfirmed suspicion that the Fords and Mercs were not strictly stock, since they dominated the field—that is, until a couple of Paulista sportsmen imported some hot European roadsters. More specifically, cars imported were a beautiful 2½-litre (152.6 cu. in.) Alfa that had seen plenty of European competition, and a prewar two-litre (122 cu. in.) German BMW convertible. Both of these cars were fast and exceptionally stable on turns. Even in the hands of their inexperienced drivers they had little trouble keeping ahead of the American cars. Another promising entry, a few of which at that time had been recently imported, was the British Allard, with a Ford V-8 engine and gearbox mounted in a sports type roadster body. In the last race I witnessed the Allard ran a good second to the Alfa and easily stayed ahead of the rest of the pack. Nearly all the stock car races had as also-rans two or three small (1100cc) Fiat sedans which, despite their tiny four-cylinder engines and high narrow bodies, did a surprisingly good job against the 100 hp American cars. During one race, I recall, a serious match for seventh or eighth place developed between a 1948 Mercury convertible and a little well-worn grey Fiat. On every straight stretch the Merc's greater speed would widen the gap between the cars, but in each of the numerous turns the Fiat almost closed the distance on its more powerful adversary. Brute force finally saved the day for the Mercury, but it was a close brush with ignominy.

A novel feature of the Interlagos track is that after racing meets and on almost all other days the circuit is open to the public. Imagine the spectacle of its banked turns and long straightaways thick with the traffic of heavy sedans, motorcycles, taxicabs, sporty roadsters, trucks jam-packed with picnickers, all jockeying for position and swerving excitedly on the curves. Imagine too the consternation of the racing driver out for a few practice runs as he weaves his Maserati in and out of the jumbled traffic, challenged on every turn by some daring youth out sporting in the family Buick. Even I couldn't resist the temptation to stretch the muscles of my old Stutz Vertical 8, and if it hadn't been for a sticky valve, I could have showed some new cars a thing or two.

## Classic vs. Restyled

(Continued from page twenty-seven)

and the restyling tricks limit the actual customizing of the car. In other words, when *everyone* restyles his car by chopping (lowering) the top or using a Carson top on the convertibles, lowering the body by the use of blocks or reversed spring-end eyes, dechroming, leading or molding in all fender and body joints, giving the car a later model grille or the grille of another car, ditto bumpers and taillights, skirting the rear fenders, chroming the dash—when *everyone* resorts to exactly the same restyling methods, the end product actually becomes a *standardized* model of a restyled car.

This is the exact opposite of the old-school theory of customizing where you broke your back trying to get something as different from the other custom cars as you could. The designers of the classic cars would never—well, hardly ever—limit the function of an automobile in an attempt to get something different. The first restylist of a Ford, Chevy, or Buick, set an extremely bad example for the restyled cars to come by limiting two important *functions* of a car: he cut down visibility and road clearance. And it hardly behooves the restyling boys to hurl any charges of "impracticality" at the classic cars because the inevitable widening of the restyled body plus the custom lead-formed fenders do not allow for cheap body and fender repairs—an important item to consider in today's heavy traffic.

So what's good about them if they lack individuality by their standardization of restyling techniques, and with their unfunctional qualities? As MOTOR TREND has stated on one occasion, these cars are of interest if for no other reason but the fact that their features and innovations have become standard on later model stock cars, thus contributing to the general progress of automobile design—thus bringing us back to what I wrote at the beginning of this analysis. Things like flushed-in license plates, the prac-

tical chrome dash, the smooth lines of restyled cars, their own private war on Detroit gimcrackery, gewgaws, gingerbread, and general garishness, and the mechanical wizardry of concealed door and trunk latches—to say nothing of what's under the hood of most restyled cars—these things are major contributions to automotive design in their basic functionalism. True, these cars can never achieve an ultimately good design because the basic stock car which is used for modification is a poor design in the first place—the old "can't make a silk purse out of a sow's ear" adage. The 1939 Ford convert coupe, the 1941 Buick, the 1940 Chevy club—these were not the best of automobile designs to start with, despite their cheapness on the used car market, availability of parts, ease of engine modification or any other reason for their choice. When the top is chopped on these cars, the body lowered, the fender-body joints smoothed in, you only accentuate the bulkiness of the body at the door section—hence the opprobrium "Blister-box" for the ungraceful body line from a side view.

It seems to boil down to the simple culmination typical of most arguments—there's something to be said for both sides. The adherents of these two schools of auto design have something to learn from one another, obviously. The tendency of the classic car worshippers is much the same of any group which finds nothing good in the present and reverts to the things of the past—a refusal to recognize the fact that any change—good or bad—is better than none. And the restylers are guilty of that tremendous impatience with the products of the past which refuses to stop and learn from both the mistakes and the successes of those products. The cars of the future will be designed by men who will take from both their best features and amalgamate them into what we may hope will be the ultimate in automobiles using an internal combustion engine.

## New Instrument Column

We are pleased to announce that, starting with the next issue of MOTOR TREND, the Stewart-Warner Instrument Division of the Alemite Company of Southern California will furnish us with a column devoted to technical explanations of how instruments function. The first of these columns will be concerned with vacuum gauges. We are certain you won't want to miss it.

March 1950

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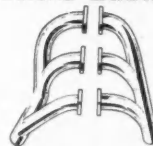
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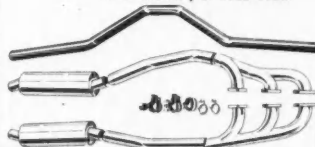


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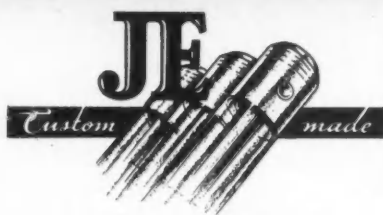


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## The N. X. I.

(Continued from page eight)

borne in mind that speed equipment for the smaller engine will be increasingly available in the United States because of this engine's use for a new racing class—the three-quarter American midget and 500cc European cars. Nash engineers specified that other British and Continental engines could be used in the car. With the hood lower than the fenders, front visibility is excellent and the use of the panoramic or coupe de ville-styled rear window kills the usual convertible blind-spot in the rear. Disc-type hydraulic brakes will be used, and the emergency brake will be the mechanical, drive-shaft-mounted drum type which the Fiat assembly uses. The car equipped with the 18 horsepower 500 engine will have an estimated top speed of 60 to 65 mph and will deliver 45 to 50 miles per gallon. The 36 horsepower engine will produce a top speed estimated at 65 to 70 mph and about 35 to 40 miles per gallon. The smaller-engined car will weigh about 1350 pounds and is tentatively priced at \$950; the car equipped with one of the larger engines weighs around one hundred pounds more and will cost about \$50 more.

Orders abroad for the mechanical components of the car and tooling for the bodies at Nash will not be started until the results of the current survey show a definite market for a yearly production of around 50,000 cars. If this much of a demand is created by public interest, Nash production would begin in about one year, according to officials, using new assembly plants to be acquired on both coasts.



NEW 1950 British Austin, with higher rear axle ratio, gives smoother and faster cruising speeds (60-70 mph) and still greater gasoline mileage (35 mpg). Car has many additional features including larger steering wheel, heavier bumpers, and sponge rubber door seals to keep out dust. Front brakes are hydraulic, mechanical on rear. Prices are unchanged on all models. Devon, 40 hp model above, delivers in New York for \$1345

## MOBILGAS GRAND CANYON RUN

AS THIS issue of MOTOR TREND reaches the newsstands, final preparations are being made by the General Petroleum Corporation and the AAA for the Mobilgas Economy Run. Thirty-two cars are entered in this event, to take place on February 15-16 (See February MOTOR TREND), and include the following:

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Oldsmobile 98  
Packard 8  
Packard Super 8  
Plymouth  
Studebaker Champion  
Studebaker Commander  
Studebaker Land Cruiser  
3 Willys Jeeps (Special Class)



## Cars of Character

(Continued from page twenty-two)

the twenties. No factory team could have entered half these events.

One of the major mutations in racing car design was the appearance of the straight eight in 1921. Both Bugatti-influenced, Duesenberg and Ballot were the innovators and their daring won them races . . . for a while. EB had built his first in-line eight in 1913 and he promptly designed a crankcase to take two Type 22 blocks. This car was called the Type 30 and was a cautious experiment in the direction of high performance eights. It led directly to one of the fastest, most efficient and romantic cars in history: the Type 35.

This was a thoroughbred beast if there ever was one . . . not an ounce of excess weight on its strong, wiry frame . . . just bone, muscle, sinew, and speed. The mill was a perfect, tiny eight, 60 by 88 mm (2.36 by 3.46 inches), 1990 cc (121.5 cu. in.). The rod bearings were rollers, with two rollers and three ball races for the five mains and this model, along with the Type 30, set the pattern for all the Bug types which followed. Let's look it over.

You lift the little aluminum hood and are bowled over by the stark, simple, polished aluminum rectangle reposing where a jumble of machinery should be. The flat surfaces are decorated, not marred, by a neat row of bright, round brass discs which may be removed for valve inspection. There are few projections from the plane sides . . . on the left is the polished aluminum intake manifold, a branch leading to each of the two blocks. On the right are the two sets of flawlessly forged and filed—by hand—four-port exhaust headers. From the flat top of the camshaft cover a small tube projects . . . the cam-driven air pump for the fuel system. The outer finish promises that nice things lie within.

Ball and roller crankshaft bearings naturally require either split cages or built-up shafts. EB used the latter, with each throw and "counterweight" a separate unit, so accurately machined that reassembly with perfect accuracy was certain—if one's tool kit included a ten-ton press with which to force the almost zero-tolerance pins into their appropriate holes. Each throw was turned out of solid, round stock, the journals joined by circular webs, each acting as a small flywheel. Of course, all this was drilled out for lubrication and balance. Until you've seen a Bug

crankshaft, you just haven't seen a piece of machine work.

The con rods are absolutely feathery, pistons are three-ring aluminum, wrist pins are retained by a free-floating aluminum plug in each end. Three valves per barrel are used, the Brescias having demonstrated that four valves necessitated the removal of a dangerously large amount of metal from the head. The flywheel itself is minute, has no teeth and, of course, there's no starter, though this can be rectified for the faint-of-heart.

The frame is remarkable—six inches deep amidships, tapering to 3/4 inch at its forward extremities. The brakes are cable-operated, powerful and precise, never fading at any point and . . . Bugatti patent, like everything else. The springs are hard half-elliptics in front and almost unyielding reversed quarter elliptics at the rear. The front axle is weird but reduces unsprung weight—the springs pass through it and the diameter of its tubular section is greatly different inside and outside of the springs. It's as though the maker had taken a shotgun barrel, forged its ends together and hung wheels on them. What EB didn't know about engines he knew about making a car gear itself to the road. The steering was always sensitive and precise with a powerful caster action that, as the hill-climb champion Raymond Mays put it, gave the impression that any Bug was "always on the driver's side."

Well, that's a glimpse of the Type 35, a typical single-stick Bugatti. It was to cars what Nuvolari was to drivers: the corner master. What it lacked in speed it made up for in uncanny maneuverability, powerful braking, dive-bomber acceleration, and time-saving Bugatti twists like the famous aluminum spoke wheels with brake drums integrally cast . . . another pioneering reduction in unsprung weight which other great makes were quick to adopt.

The Bug is a character-loaded car and these are some of the imaginative features of design that made it, if not the greatest racing car of all time, at least the absolute equal of that enchanted class which includes such names as Mercedes, Alfa-Romeo, Maserati, and Delage. Bugatti's latter day adventures in the field of gigantic machinery and the development of the twin camshaft Bug engine will be covered in further additions to these notes.

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# LETTERS...

FROM OUR READERS...

Letters published in this department are the opinions of the writers and are not to be construed as those of the editors. Address correspondence to: Letters From Our Readers, MOTOR TREND, 548 South San Vicente Boulevard, Los Angeles 48, California.

**CALENDAR OF EVENTS**

Gentlemen:

... In response to your invitation for criticism... I believe a calendar of coming events for a period of at least 60 days in advance would be welcomed by many... I am sure many others feel the same way.

J. R. Korbein  
Ypsilanti, Michigan

—Reader Korbein is right. Many other readers do feel the same way. See page 20 of this issue.—Editor.

**SACRAMENTO RACE CORRECTION**

Gentlemen:

Your January issue contained two reports on big car races at Sacramento and Del Mar by Griffith Borgeson and Nick Alexander, respectively. Both of these were well done and made interesting reading, especially for anyone unable to attend the races.

I am fully aware of the mass of detail and technical data that has to be digested by a reporter to make a success of a story on automobile racing. However, at the risk of appearing captious, I must point out an error in the story on the Sacramento race. I refer to the last paragraph, where reference is made to Duke Dinsmore's car using a Hilborn fuel injector, to the statement that the car didn't start the race due to complications. This is incorrect. The car qualified seventh, and not only did it start the race, but it moved from seventh to challenge third position in five laps before losing the lower radiator hose. As the water departed so did the horsepower, and as the heat built up, Duke faded back several positions but was still able to continue until sixty-some-odd laps before finally retiring to the pits with a well-cooked engine.

This is the same car which, with the injector, qualified so well at Indianapolis last year, as correctly reported by Mr. Borgeson, and which also set a new one-lap record on the mile track at Detroit with the same equipment.

I find your publication most interesting and wish you prolonged success.

Stuart Hilborn  
Culver City, California

**CLASSIC AMERICAN CARS**

... Sometime in the near future would you write an article on the Cord front wheel drive, giving a few photos of the various models and any other interesting data you may have.

R. J. Chmel  
Hopkins, Minnesota

... I would like very much to see an article on 1936-37 Cords with pictures and illustrations and such information as performance, top speed, etc. ...

R. P. Acton  
New London, Connecticut

—Due to the bulk of letters asking for information on Cords, one of our staff writers is now preparing a comprehensive report on this car.—Editor.

**CHROME OR DECHROME?**



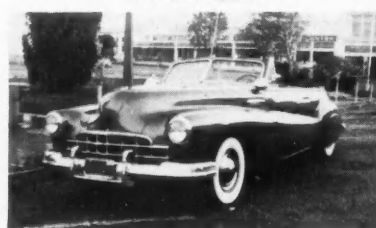
Gentlemen:

I am... enclosing a (photo) of my 1940 Pontiac which, in my humble estimation makes a more striking car than... a de-chromed (car). (This is) to show the fellows that chrome ornaments add more to a car than dechroming.

William Ingram  
Grosse Point, Michigan

—Chrome definitely adds more to a car than dechroming, but whether it's appearance that is added is a point of discussion. See page 21 for additional photos.—Editor.

**COVER CAR?**



Gentlemen:

... I would like to advise you that we fellows among the Redwood trees are as car-conscious as the boys in the south. Although we have, as yet, very poor facilities locally for parts, experience, or proving grounds, there are some very sharp... jobs being built around here...

(My) car was a '48 Buick (and now has) a 1948 Cad grille... '49 Pontiac tail lights... all chrome removed. The car has been lowered... a section added to... rear fenders... all seams are molded.

It's a bit simple and amateurish compared to some of the jobs you show, but I'm kind of proud of it.

Don Wilson  
Arcata, California

—It appears to us that reader Wilson's car is anything but "amateurish." If it weren't for the fact that it closely resembles the February cover car, it would definitely merit being featured in MOTOR TREND. A car such as this is surely one to be proud of.—Editor.

Motor Trend

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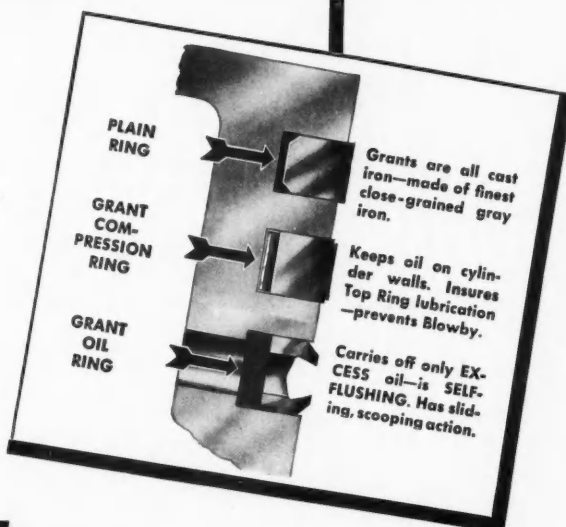
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